

**SERVICE
MANUAL PM250 PM400**

marantz

model PM250/PM400

Stereophonic Amplifier

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ Company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

ORDERING PARTS

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT
20525 Nordhoff Street
Chatsworth, California 91311
Phone: 1-800-423-5108
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

CANADA

Superscope Canada, Ltd.
3710 Nashua Drive
Mississauga
Ontario, Canada L4V1M5

AUSTRALIA

Superscope (Australasia) Pty., Ltd.
32 Cross Street (P.O. Box 604)
Brookvale 2100 N.S.W.
Australia

JAPAN

Marantz Japan, Inc.
3622 Kamitsuruma
Sagamihara Shi
Kanagawa, Japan

EUROPE

Superscope Europe, S.A.
Avenue Leopold III, 2
7120 Peronne-Beaumont
Belgium

Marantz France
Rue Louis Armand 9
92600 Asnieres
Hauts-de-Seine
France

Marantz Audio U.K. Ltd.
London Road, 203
Staines
Middlesex
England

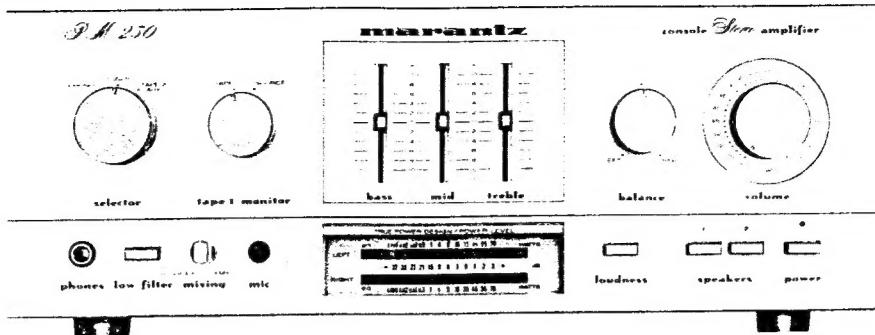
Superscope GmbH
Max-Planck-Strasse 22
D-6072 Dreieich 1
West Germany

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

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We sound better.

TABLE OF CONTENTS

SECTION	PAGE
1. INTRODUCTION	1
2. PRE-AMPLIFIER	1
3. MAIN AMPLIFIER	1
4. TROUBLESHOOTING ANALYSIS	1
5. POWER AMPLIFIER ADJUSTMENT	1
6. TEST EQUIPMENT REQUIRED FOR SERVICING	2
7. PERFORMANCE VERIFICATION	2
8. VOLTAGE CONVERSION	5
9. SCHEMATIC DIAGRAM (PM250 and PM400)	6.8
10. DIAGRAM AND COMPONENT LOCATIONS	10
10.1 LED Power Meter Assembly (PX00) Schematic Diagram and Component Locations	10
10.2 Main Assembly (P700) Schematic Diagram and Component Locations	10
10.3 LED Lamp Assembly (PY00) Schematic Diagram and Component Locations	10
10.4 Loudness Assembly (PS00) Schematic Diagram and Component Locations	11
10.5 Microphone AMP. Assembly (PJ00) Schematic Diagram and Component Locations	12
10.6 Tone Assembly (PF00) Schematic Diagram and Component Locations	13
10.7 Volume Assembly (PG00) Schematic Diagram and Component Locations	13
11. BLOCK DIAGRAM	14
12. EXPLODED VIEW AND PARTS LIST	15
13. ELECTRICAL PARTS LIST	22
14. TECHNICAL SPECIFICATIONS	27



1. INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz PM250/PM400 Stereo Console Amplifier. Servicing information and voltage data included in this manual are intended for use by knowledgeable and experienced personnel only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of circuitry operation.

The parts list furnishes complete ordering information. Most replacement parts should be ordered from the Marantz Company. However, a simple description is included for parts which can be obtained locally.

2. PRE-AMPLIFIER

Signals from the TUNER and AUX terminals are taken to the SELECTOR SWITCH (SV01).

Signals from the PHONO terminals pass through the phono amplifier (Q401, Q403) where they are amplified by 36 dB and at the same time undergo RIAA equalization, before going to the SELECTOR SWITCH (SV01). (In the case of the PM400, signals coming in from the PHONO 1 and PHONO 2 terminals are selected by means of the SELECTOR SWITCH and then taken the PHONO amplifier).

After being selected by the SELECTOR SWITCH, the incoming signals are taken to the TAPE MONITOR switch and TAPE OUT terminals.

Signals which enter from the TAPE IN terminals are taken to the TAPE MONITOR SWITCH.

Signals which are selected by the TAPE MONITOR SWITCH are taken to the MONO SWITCH BALANCE and VOLUME potentiometers, and then enter the preamplifier (QE01 and QE03). The preamplifier has a gain of 22 dB. The signals from the preamplifier enter TONE AMP (QF01 and QF03) and the frequency-response is controlled by the BASS, MID and TREBLE controls. After passing through the TONE preamplifier, the signals enter the main amplifier.

TROUBLESHOOTING ANALYSIS

1. Excessive line consumption
 - a. Check for shorted Q806 through Q809.
 - b. Check for shorted transistor Q715, through Q718.
 - c. Check for open Q709, Q710, R717, R718.
2. No line consumption or zero bias voltage
 - a. Check line cord, fuse, check for shorted Q709, Q710, Q717, Q718.
 - b. Check for open rectifiers Q806 through Q809 or open L001.
3. High hum and noise level
 - a. Check filter capacitors C808, C809, C801, C803, Q801.

4. POWER AMPLIFIER ADJUSTMENT

ADJUSTMENT OF IDLING CURRENT

Connect a DC voltmeter to between emitters Q715 and Q717. Adjust R717 until 11 mV is reached. Likewise, adjust Q716, Q718 and R718.

5. POWER METER ADJUSTMENT

Connect the speaker terminal output to the rated output voltage (15.5 V, 1 kHz), and then so adjust by RX07 (LCH) that the POWER METER registers 25W PM250/35W PM400. Adjust in the same manner by RX08 (RCH).

6. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the PM250/PM400 Stereo Console Amplifier. The wattmeter, AC voltmeter, and variable autotransformer may be assembled as a test fixture as shown schematically in Figure 1. The load resistors and AC ammeter may be assembled into a second test fixture as shown in Figure 2.

Line Switch	OFF
Variable-line switch	Variable
Wattmeter Switch	ON
Variable Autotransformer	0 V (fully CCW)
Load	8 ohms (0.5 mfd-OFF)
Audio Generator	1 kHz
Output	5 V range
Gain	Minimum
AC Voltmeter	30 V range

7. PERFORMANCE VERIFICATION

TEST PROCEDURE

A. TEST EQUIPMENT

Refer to Table 1 for required test equipment.

B. PRELIMINARY PROCEDURES

1. Make the test setup shown in Figure 1 with the instrument controls set in the following positions:

2. Make sure that connections between the resistive load and the system terminals of the PM250/PM400 have negligible resistance when compared with the resistance of the load itself. Appreciable resistance in wiring adds to the total load, resulting in inaccurate measurements of output power.
3. Connect amplifier output to load and connect AC cord to line power. Connect shorting plugs to the Phono input jacks of the PM250/PM400.

Item	Manufacturer and Model No.	Use
Distortion Analyzer Audio Oscillator AC Voltmeter	Sound Technology Model 1700B	Distortion measurements Sinewave and squarewave signal source voltage measurements (AC)
Oscilloscope	Tektronix Model T932 Philips Model 3232	Waveform analysis and trouble shooting and ASO alignment
Circuit Tester		Trouble shooting
DC Voltmeter	Fluke Model 8000 "Digital" Simpson Model 313, Triplet Model 801	Voltage measurements (DC)
AC Wattmeter	Simpson Model 1379	Monitors primary power to amplifier
AC Ammeter	Commercial Grade (1 ~ 10 A)	Monitors amplifier output under short circuit condition
Line Voltmeter	Simpson Model 1359	Monitors potential of primary power to amplifier
Variable Autotransformer	Superior Electronic Co., Powerstet Model 116B-10A	Adjusts level of primary power to amplifier
Shorting Plug	Use phono plug with 600 ohm across center pin and shell	Shorts amplifier input to eliminate noise pickup
Output Load (8 ohms, $\pm 0.5\%$ 100 W)	Commercial Grade	Provides 8-ohm load for amplifier output termination
Output Load (4 ohms, $\pm 0.5\%$ 100 W)	Commercial Grade	Provides 4-ohm load for amplifier output termination
Output Load Capacitor (0.5 mfd)	Mylar	Provides capacitive load for instability checks
AC Power Control Box	Optional Item. Fabricate in accordance with Figure 1	Monitors and controls primary power for amplifier
Amplifier Output Load Box	Optional Item. Fabricate in accordance with Figure 2	Provides various amplifier loads and can monitor shorted output

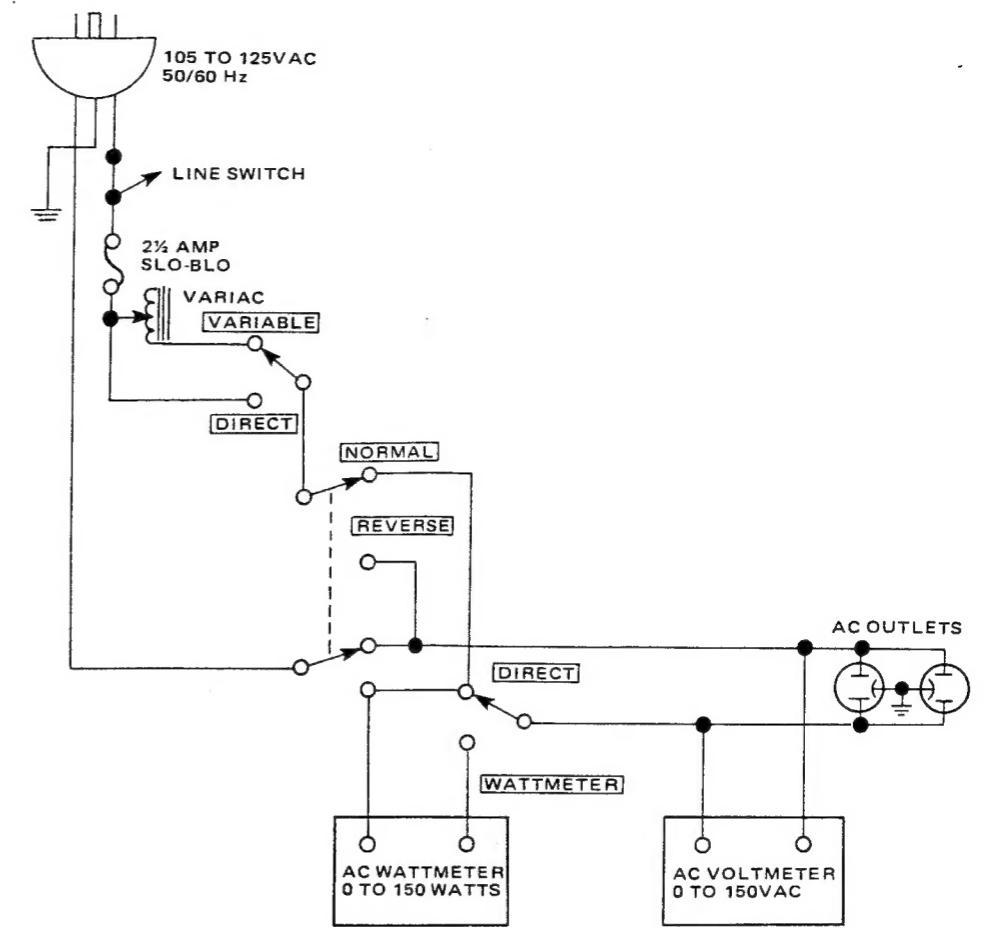


Figure 1. AC Power Control Box Simplified Schematic

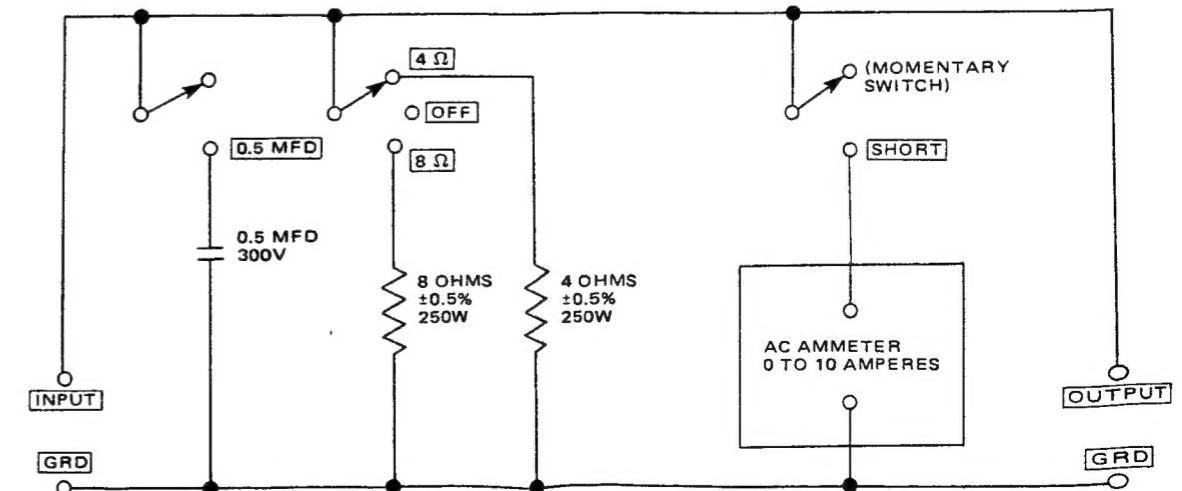


Figure 2. Amplifier Output Load Box Simplified Schematic

C. TOTAL HUM AND NOISE TEST

- With shorting plugs connected to the Phono input jacks and an 8 ohm resistive load connected across the speaker system output terminals, connect a distortion analyzer across the load.

NOTE:

If the distortion analyzer does not contain a built-in voltmeter, an AC VTVM may be substituted.

- Set the distortion analyzer controls for voltage measurements and apply power to the amplifier. Set the volume control fully CCW. Set the SELECTOR switch to PHONO.
- If the distortion analyzer indicates more than 2.0 mV refer to the trouble analysis section of this manual.
- Set the volume control fully CW. If the distortion analyzer indicates more than 20 mV, refer to the trouble analysis section of this manual.

D. MAXIMUM POWER OUTPUT

- Connect the audio oscillator to the AUX input. Set audio oscillator frequency to 1 kHz. Set SELECTOR switch to AUX.
- With the distortion analyzer connected across the output load (8-ohm), set the analyzer on the 30 VAC scale.
- Turn the analyzer on and increase the audio oscillator output to 150 mV. The AC VTVM should read 17 VAC (14.1 VAC For Model PM250 only) or more.

E. HARMONIC DISTORTION TEST

- Set the frequency of the audio oscillator and the distortion analyzer to 20 kHz.
- Set the controls of the analyzer for voltage measurement on the 30 volt scale.
- Adjust the audio oscillator output level until the analyzer meter indicates 17 VAC. (14.1 VAC For Model PM250 only)
- Switch the distortion analyzer to Set Level and adjust SENSITIVITY for full scale reading on 0 ~ 1% scale.
- Measure the total harmonic distortion with the analyzer and verify it is less than 0.05%.

NOTE:

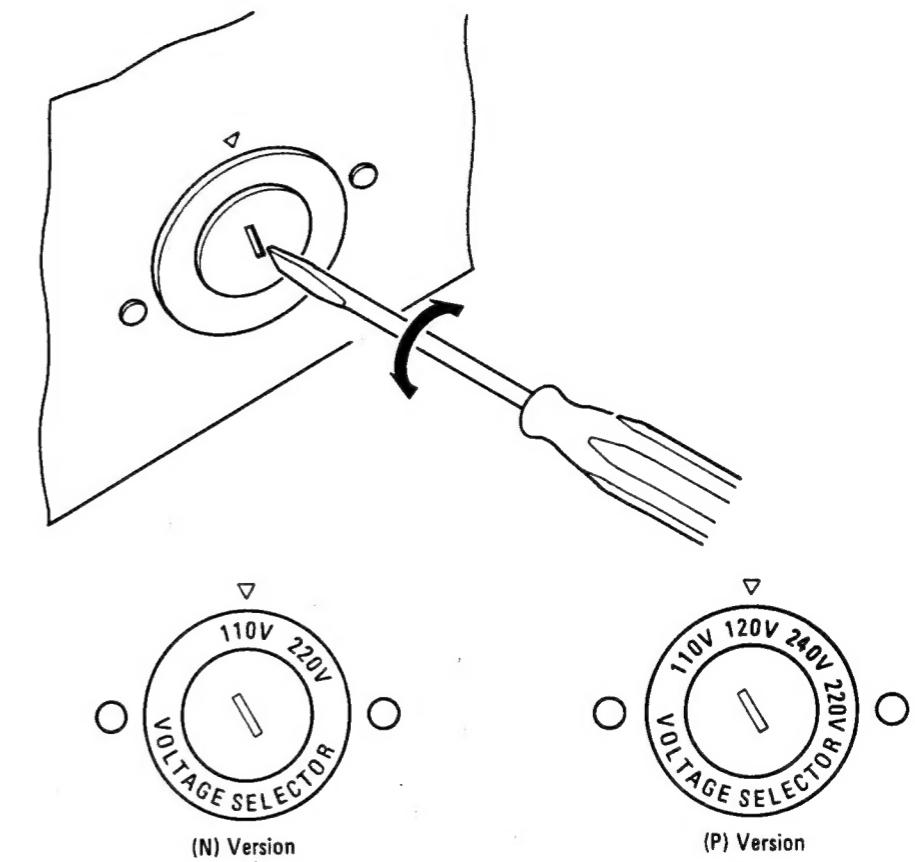
Any parasitic oscillation in the amplifier will be displayed on the oscilloscope when capacitance is switched into the load.

- Switch the distortion analyzer back to SET LEVEL. (Do not readjust sensitivity of analyzer.)
- Change the frequency of the audio oscillator and distortion analyzer to 1 kHz. Adjust audio oscillator output for a full scale reading on the 0 ~ 1% scale.
- Measure the distortion, verifying it is no greater than 0.05%.
- Repeat steps 7 and 8, changing frequency to 20 Hz. Distortion should be no more than 0.05%.
- Check for parasitic oscillation; there should be none.

8. VOLTAGE CONVERSION

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

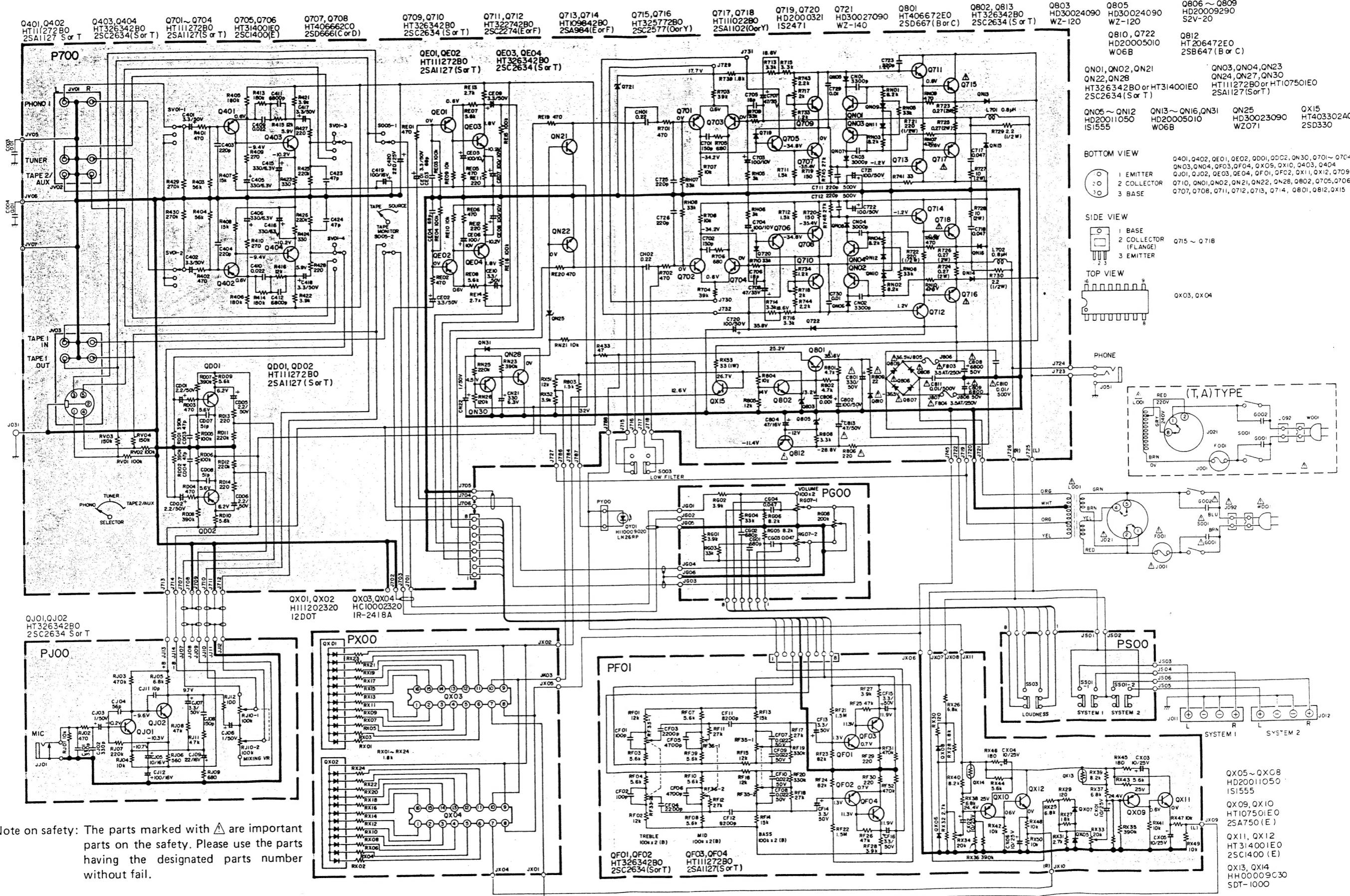
**CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.
PLEASE DO NOT DISASSEMBLE THE VOLTAGE SELECTOR ABSOLUTELY.**



Note on safety: The parts marked with are important parts on the safety. Please use the parts having the designated parts number without fail.

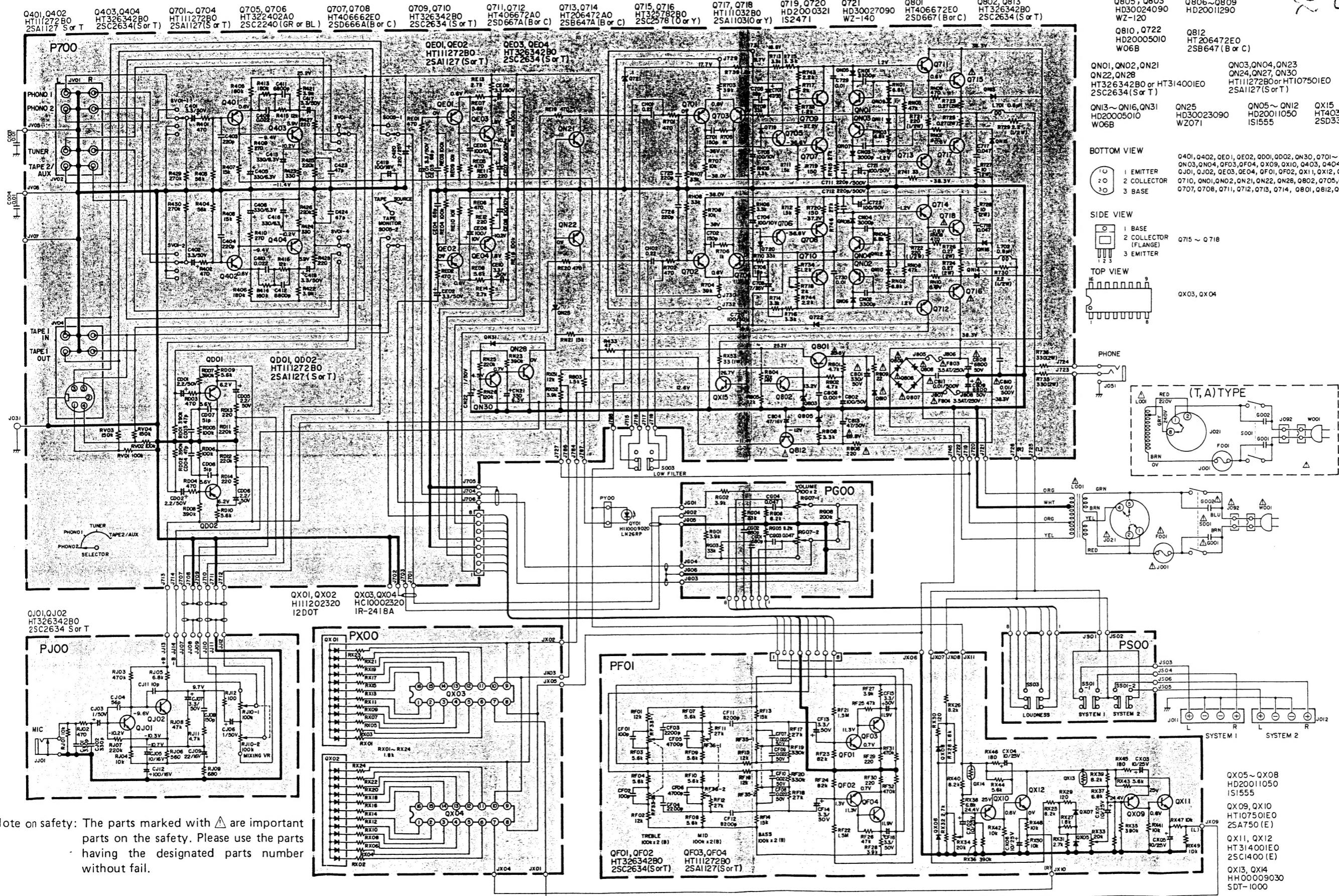
Model PM250

9. SCHEMATIC DIAGRAM (PM250 and PM400)



Model PM400

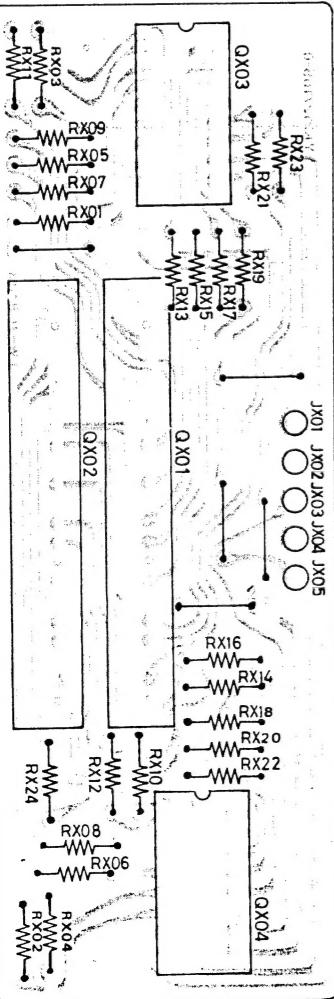
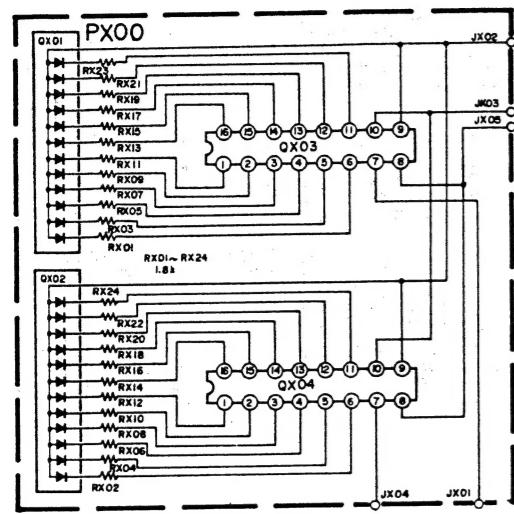
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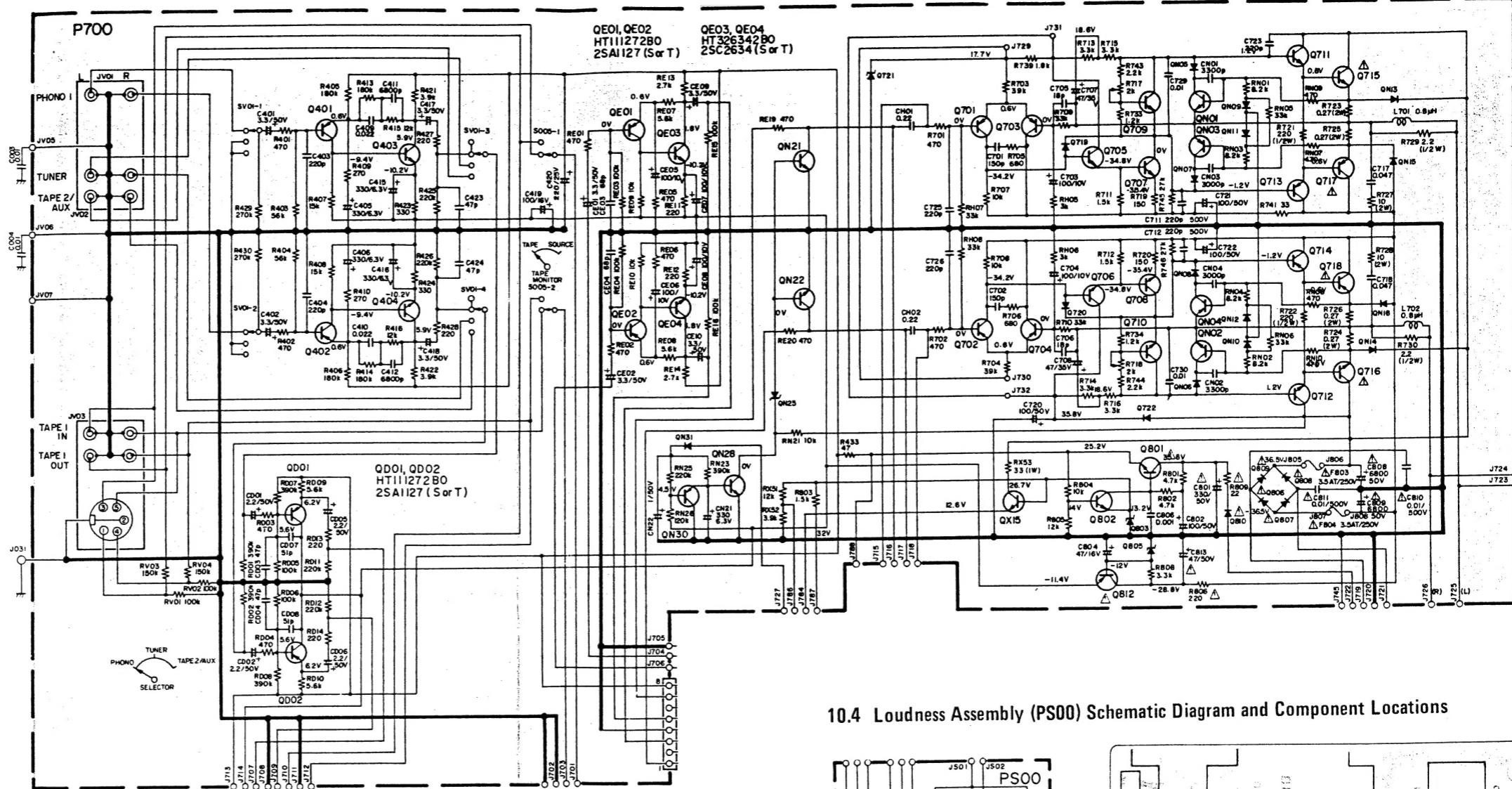
Note on safety: The parts marked with **⚠** are important parts on the safety. Please use the parts having the designated parts number without fail.

10. DIAGRAM AND COMPONENT LOCATIONS

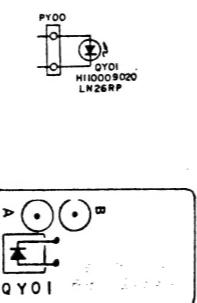
10.1 LED Power Meter Assembly (PX00) Schematic Diagram and Component Locations

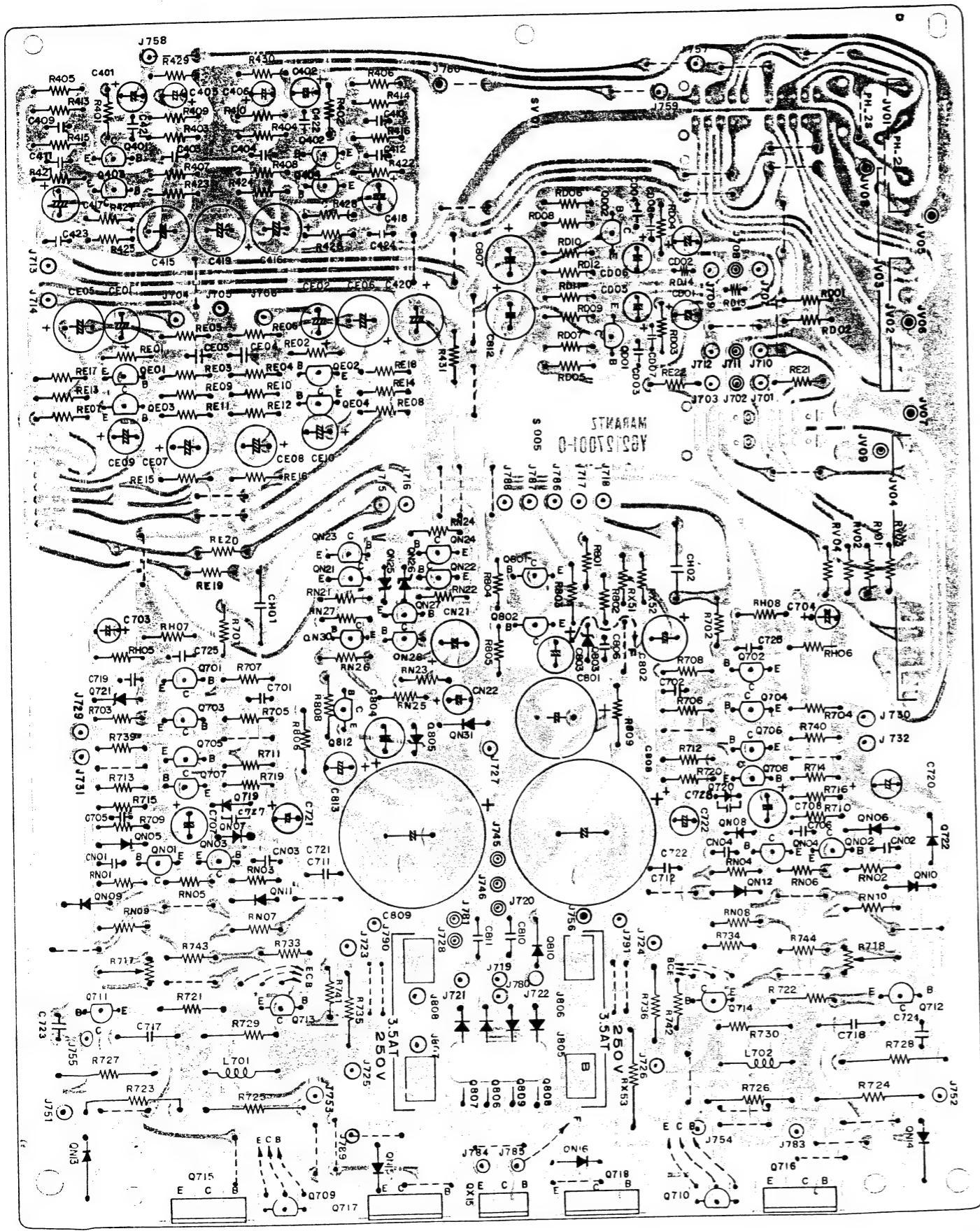


10.2 Main Assembly (P700) Schematic Diagram and Component Locations

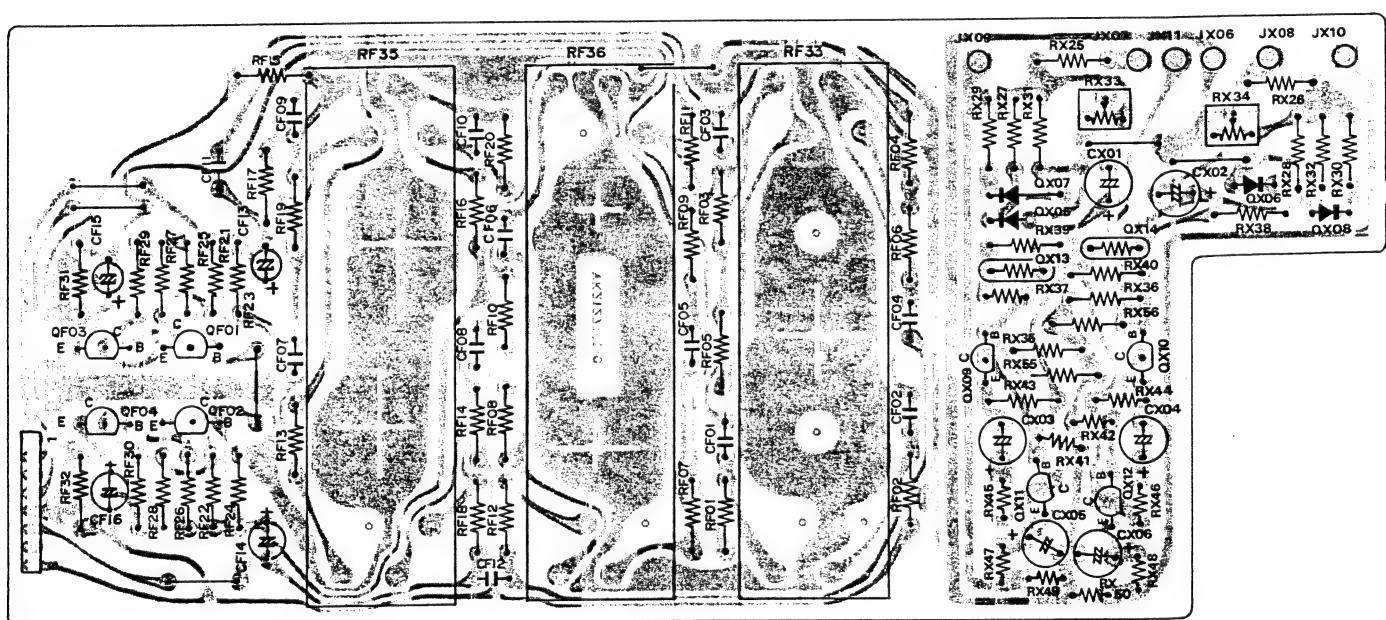
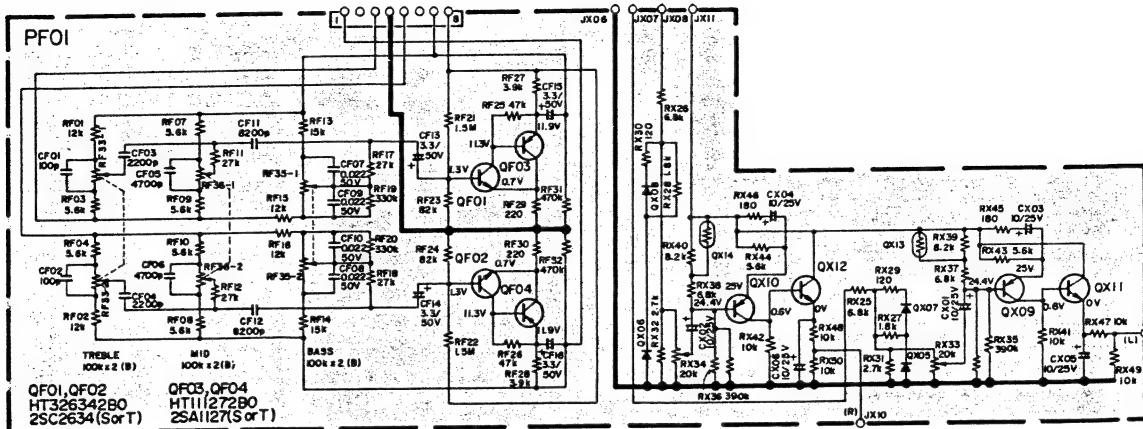


10.3 LED Lamp Assembly (PY00) Schematic Diagram and Component Locations

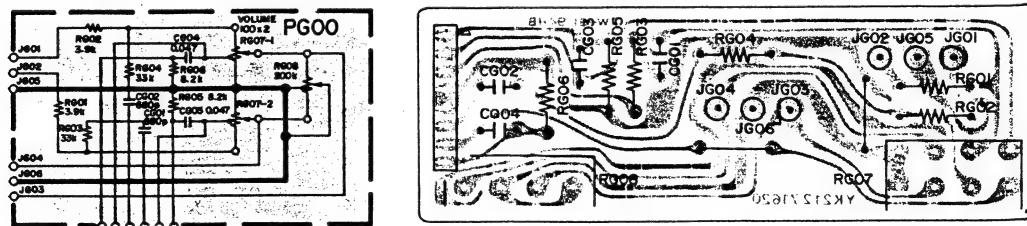




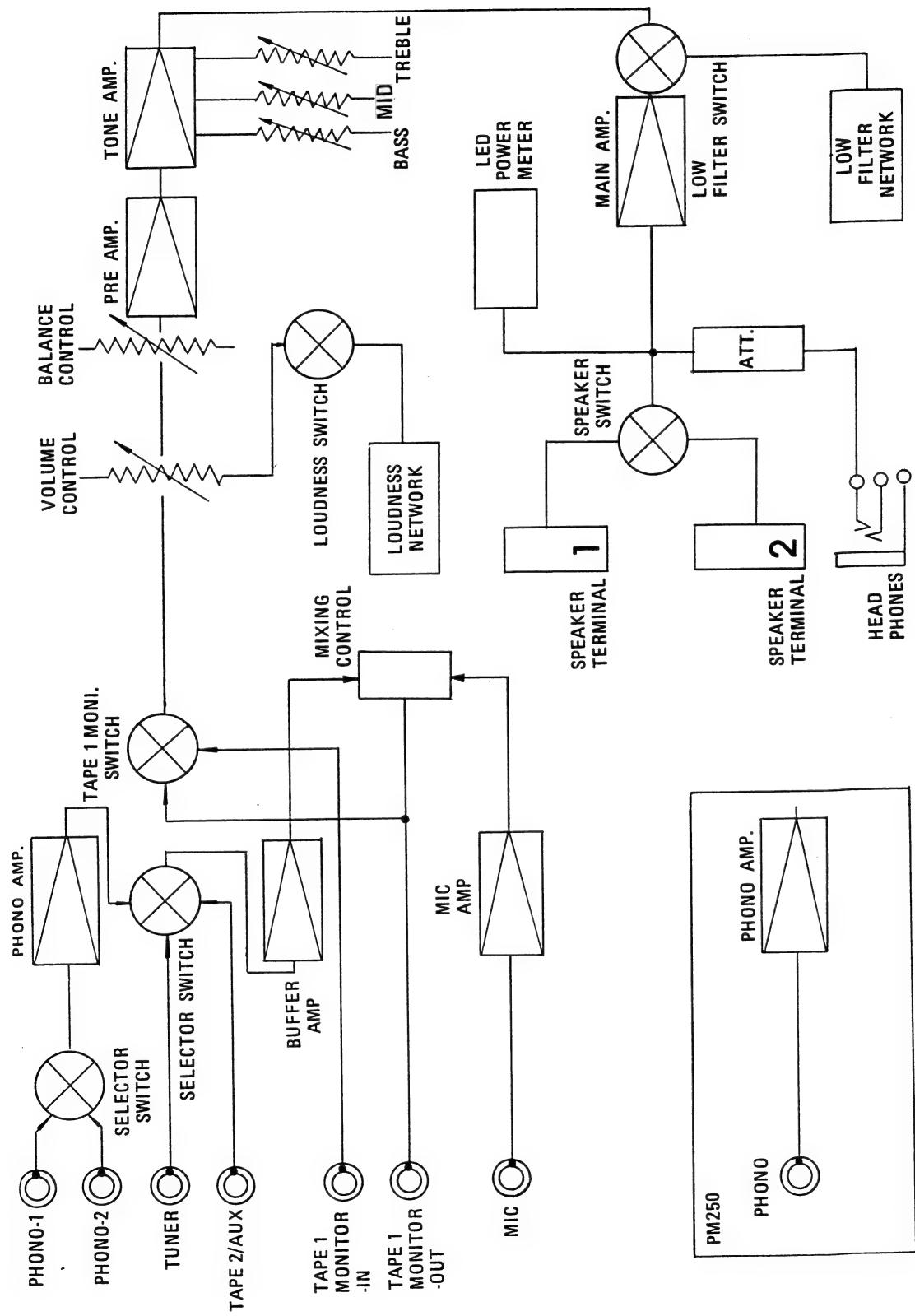
10.6 Tone Assembly (PF00) Schematic Diagram and Component Locations



10.7 Volume Assembly (PG00) Schematic Diagram and Component Locations

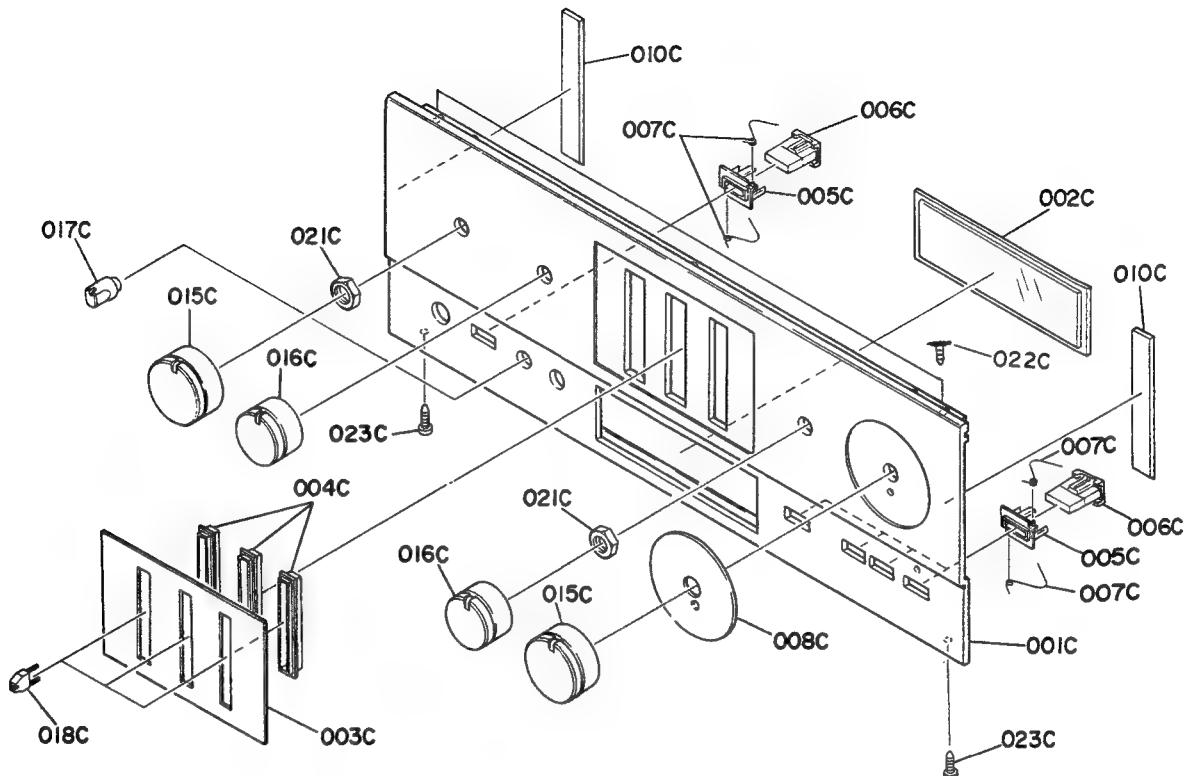


11. BLOCK DIAGRAM



12. EXPLODED VIEW AND PARTS LIST

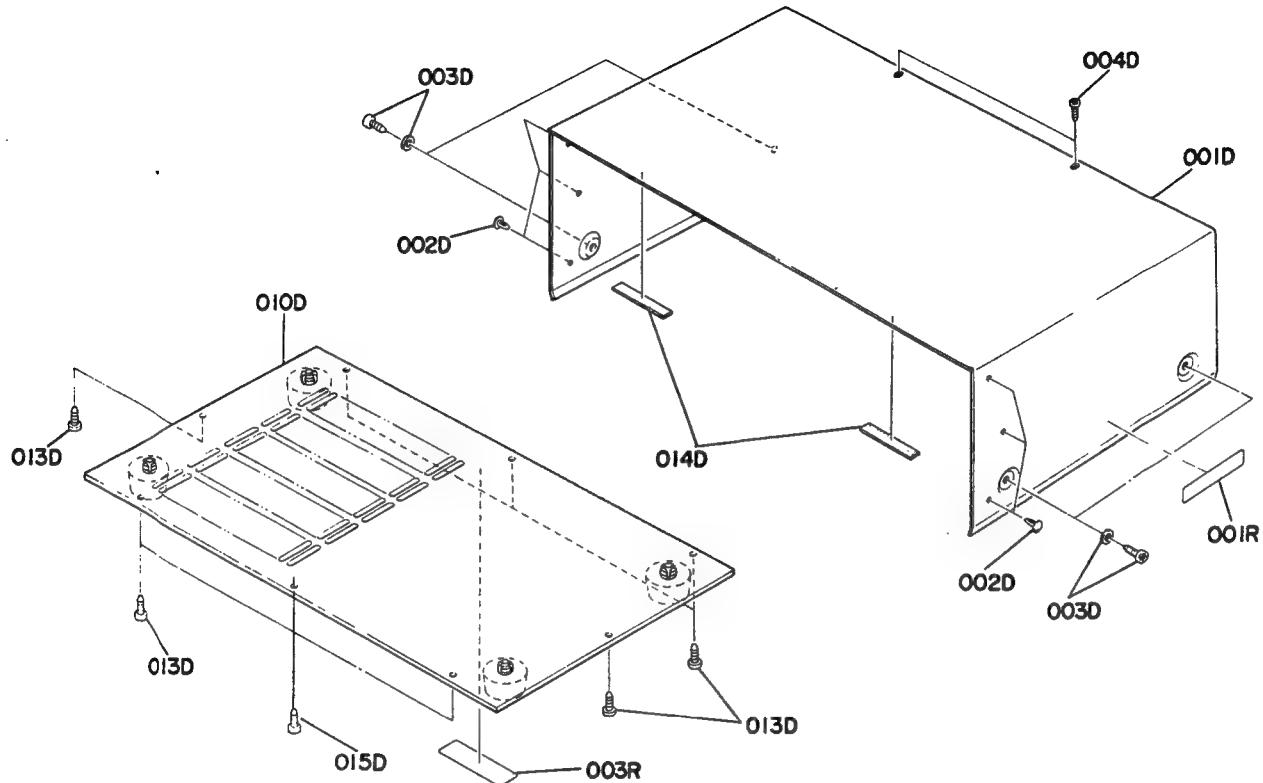
- [C01-99] Front panel



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			(PM400, ONLY)
A	1	2129063400	Front Panel Assembly
001C	1	2129063010	Escutcheon
002C	1	2129158020	Window
003C	1	2129063020	Escutcheon
004C	3	2129259020	Bushing
005C	5	2127259010	Bushing
008C	1	2129063030	Escutcheon
010C	2	2128118010	Spacer
			(PM250, ONLY)
A	1	2127063400	Front Panel Assembly
001C	1	2127063010	Escutcheon
002C	1	2129158010	Window
003C	1	2129063020	Escutcheon
004C	3	2129259020	Bushing
005C	5	2127259010	Bushing
008C	1	2129063030	Escutcheon
010C	2	2128118010	Spacer

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION		
006C	5	2127154010	Knob		
007C	10	2127115010	Spring		
015C	2	2129154010	Knob		
016C	2	2129154020	Knob		
017C	1	4276154010	Knob		
018C	3	2129154040	Knob		
021C	2	53118169A0	Hexagon Nut		
022C	2	51340308A0	F.H. Tapped Screw	B3 x 8	
023C	2	51280308B0	B.H. Tapped Screw	B3 x 8	

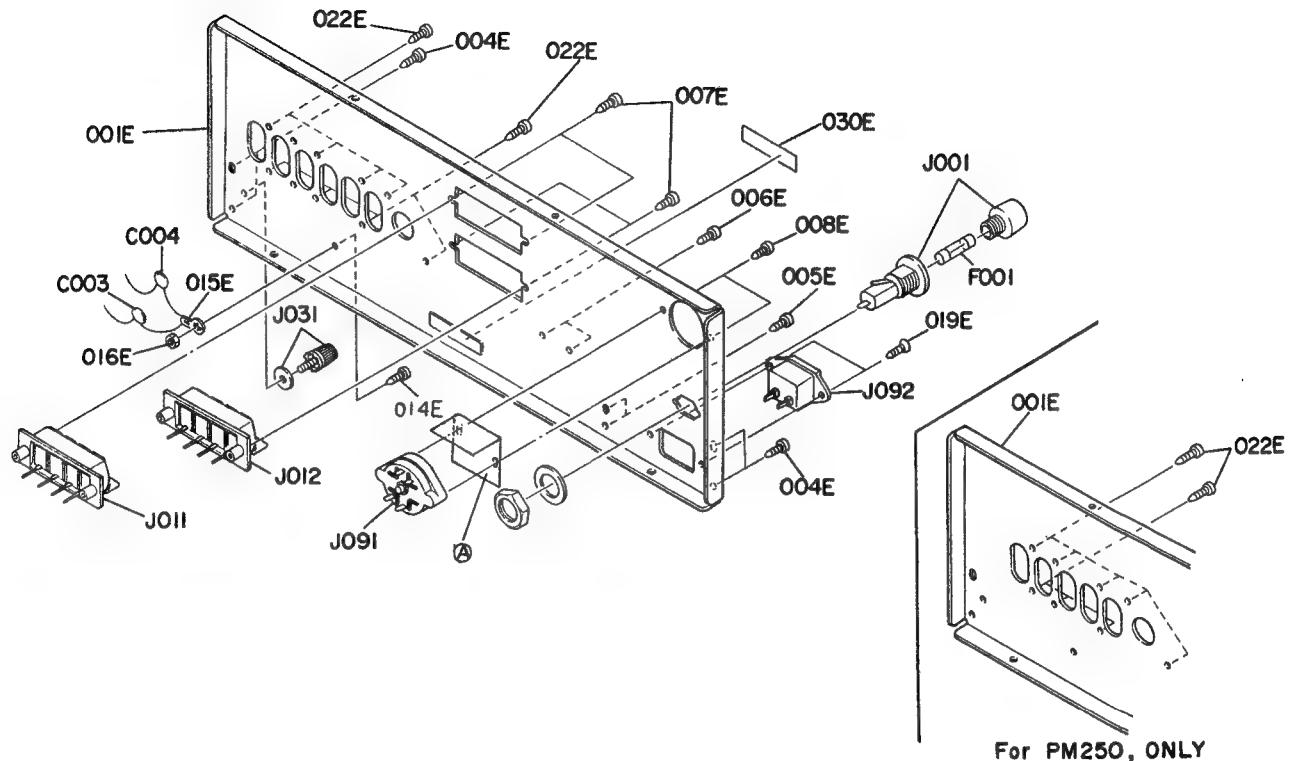
› [C02-99] Top cover



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
001D	1	2128257010	Lid, Top Cover
002D	6	2991259010	Bushing
003D	4	51260408U0	F. Washer Screw F4 x 8
004D	2	51280308U0	B.H. Tapped Screw B3 x 8

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
010D	1	2128257500	Lid, Bottom Cover Assembly
013D	7	51280410U0	B.H. Tapped Screw B4 x 10
014D	2	2965118010	Spacer
015D	1	51280408U0	B.H. Tapped Screw B4 x 8

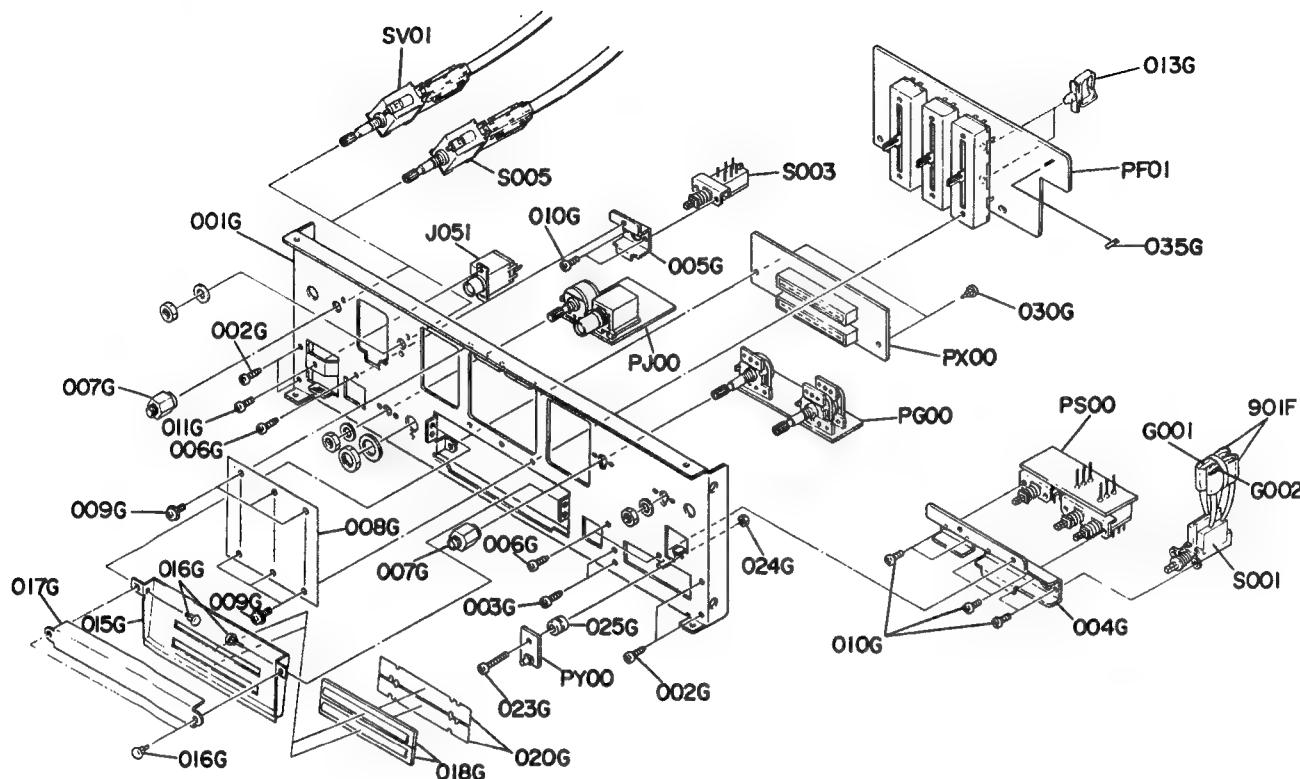
- [C03-99] Rear panel



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
001E	1	2129160210	Bracket, Rear Panel (PM400, ONLY)	
001E	1	2127160210	Bracket, Rear Panel (PM250, ONLY)	
004E	4	51280308U0	B.H. Tapped Screw	B3 x 8
005E	2	51280308U0	B.H. Tapped Screw	B3 x 8
006E	2	51280308U0	B.H. Tapped Screw	B3 x 8
007E	4	51280308U0	B.H. Tapped Screw	B3 x 8
008E	2	51280308U0	B.H. Tapped Screw	B3 x 8
014E	1	51100306S9	B.H.M. Screw	B3 x 6
015E	1	62030049W0	Lug	
016E	1	53110303A9	Hexagon Nut	
019E	2	51420308T0	O.C.H. Tapped Screw	3 x 8
022E	10	51280308U0	B.H. Tapped Screw (PM400, ONLY)	
022E	8	51280308U0	B.H. Tapped Screw (PM250, ONLY)	
030E	1	2112265010	Indicator	
(A)	1	2129120010	Insulator	

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
C003	1	DK18103310	Ceramic Cap. 0.01μF +80% -20%
C004	1	DK18103310	Ceramic Cap. 0.01μF +80% -20%
△F001	1	FS10080800	Fuse 800mAT (PM400, ONLY)
△F001	1	FS10063800	Fuse 630mAT (PM250, ONLY)
△J001	1	YJ08000290	Jack, Fuse Holder
J011	1	YT03040170	Terminal, Speaker
J012	1	YT03040170	Terminal, Speaker
J031	1	YL03010240	Terminal, Ground
△J091	1	BY05060010	Voltage Selector (110/220)
△J092	1	YP04000590	Plug, A.C. Inlet

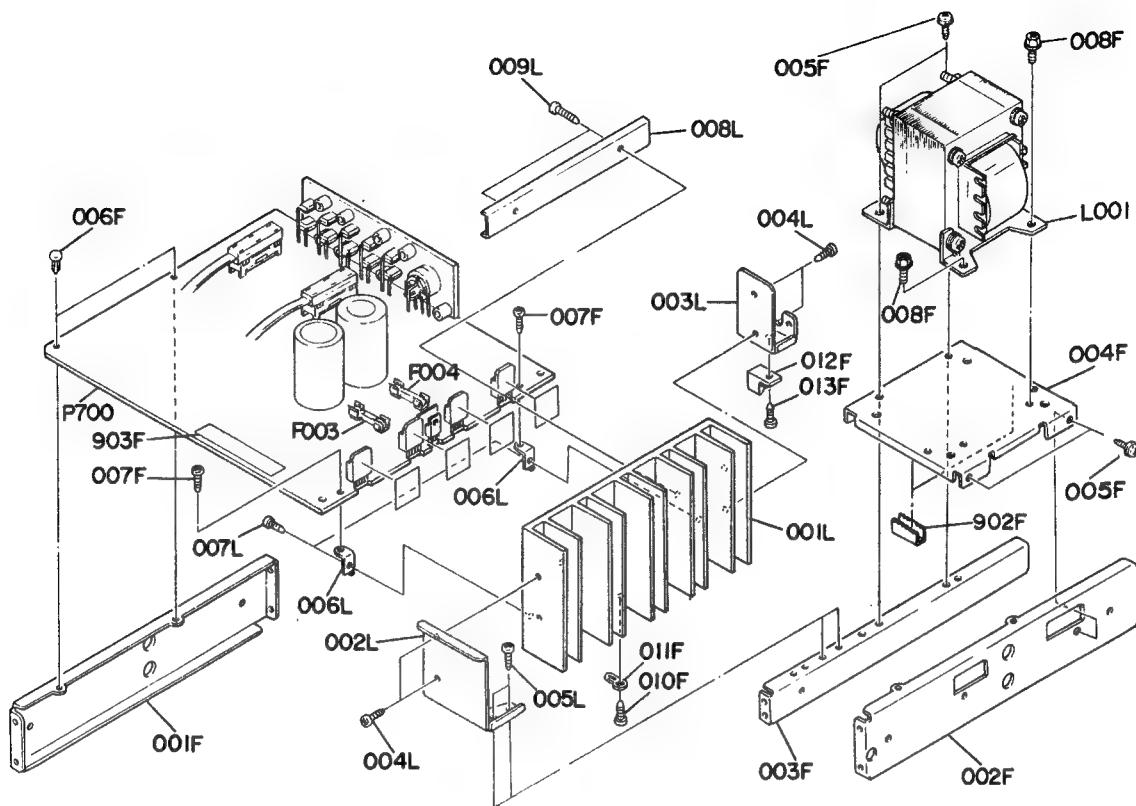
• [P01-99] Chassis and General parts



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
001G	1	2129160010	Bracket, Front Chassis
002G	4	5128030880	B.H. Tapped Screw B3 x 8
003G	2	5128030880	B.H. Tapped Screw B3 x 8
004G	1	2129160020	Bracket
005G	1	2129160030	Bracket
006G	3	5128030880	B.H. Tapped Screw B3 x 8
007G	2	2129114010	Stopper
008G	1	2129303020	Mask
009G	6	51480306S9	F. Washer Screw F3 x 6
010G	8	51100306A9	B.H.M. Screw B3 x 6
011G	1	51100306A9	B.H.M. Screw B3 x 6
013G	2	2129005010	Clamper
015G	1	2129302010	Dial, (PM400, ONLY)
015G	1	2127302010	Dial, (PM250, ONLY)
016G	4	2912259020	Bushing
017G	1	2129303010	Mask
018G	2	2127355010	Lens
020G	2	2129303030	Mask
023G	1	51570315B0	P. Taptite Screw B3 x 15
024G	1	53110303A9	Hexagon Nut
025G	1	4367259020	Bushing
030G	2	2276005050	Clamper
035G	1	2884053020	Cover

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
901F	2	2926120010	Insulator
△G001	1	DF17223800	Film Cap. 0.022μF ±20%
△G002	1	DF17223800	Film Cap. 0.022μF ±20%
J051	1	YJ01001200	Jack, Headphone
△S001	1	SP02010440	Push Switch, Power
S003	1	SP02010260	Push Switch, Low Filter
S005	1	SR04020180	Rotary Switch
SV01	1	SR04040170	Rotary Switch, (PM400, ONLY)
SV01	1	SR04030250	Rotary Switch, (PM250, ONLY)

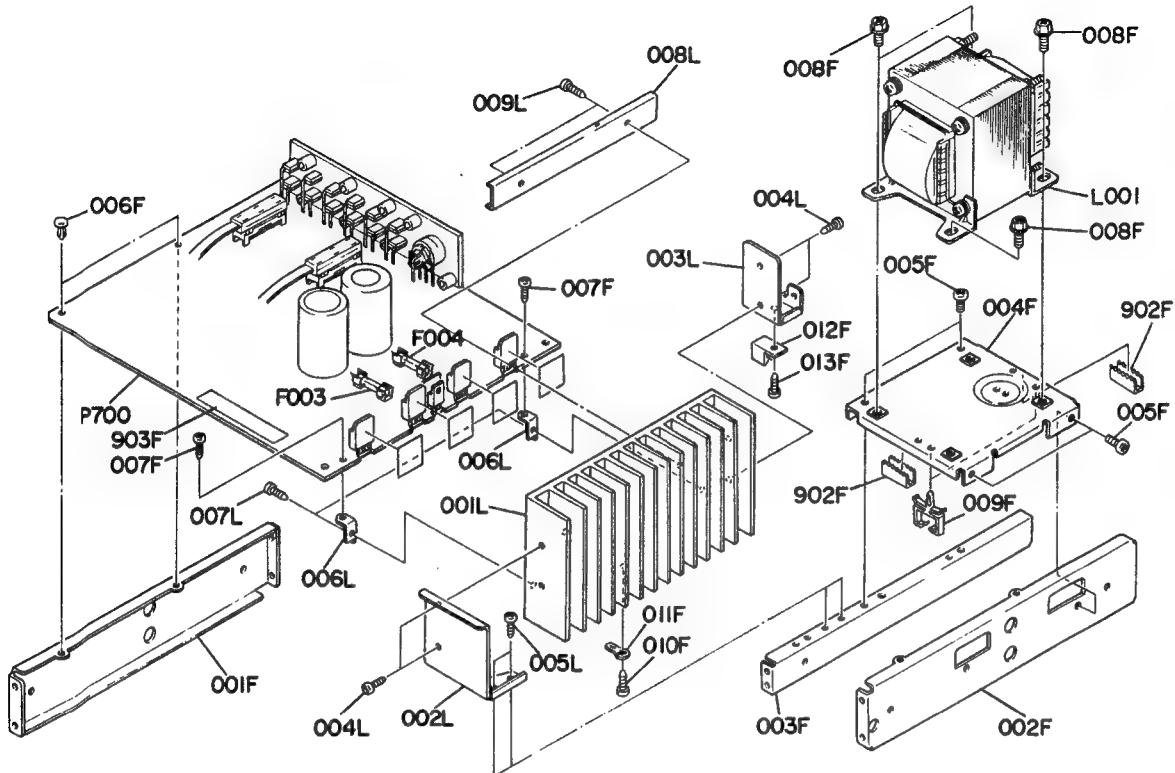
- [P02-99] Main P.W. Board and General parts (PM250 ONLY)



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION		
			(PM250, ONLY)		
001F	1	2258126010	Stay, (L)		
002F	1	2258126022	Stay, (R)		
003F	1	2258126033	Stay, Center		
004F	1	2127160010	Bracket		
006F	2	2276005050	Clamper		
007F	2	51280308B0	F. Washer Screw	F3 x 8	
008F	2	52040410AO	H. Head Bolt, S.F		
010F	1	51280308B0	B.H. Tapped Screw	B3 x 8	
011F	1	62030049W0	Lug		
012F	1	2887005012	Clamper		
013F	1	51280308B0	B.H. Tapped Screw	B3 x 8	
902F	2	2218259020	Bushing		
903F	1	2205861010	Label		
005F	4	51280410B0	F. Washer Screw	F4 x 10	

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
001L	1	2127267010	Heatsink	
002L	1	2127160020	Bracket	
003L	1	2258160050	Bracket	
004L	4	5128030880	B.H. Tapped Screw	B3 x 8
005L	2	5128030880	B.H. Tapped Screw	B3 x 8
006L	2	2231160040	Bracket	
007L	2	5128030880	B.H. Tapped Screw	B3 x 8
008L	1	2258005013	Clamper	
009L	2	5128031480	B.H. Tapped Screw	B3 x 14
△L001	1	TS17615020	Power Transformer	
P700	1	YG21270010	P.W. Board, Main	
	1	ZZ21278010	P.W. Board Assembly	
△F003	1	FS10350800	Fuse	3.5AT
△F004	1	FS10350800	Fuse	3.5AT

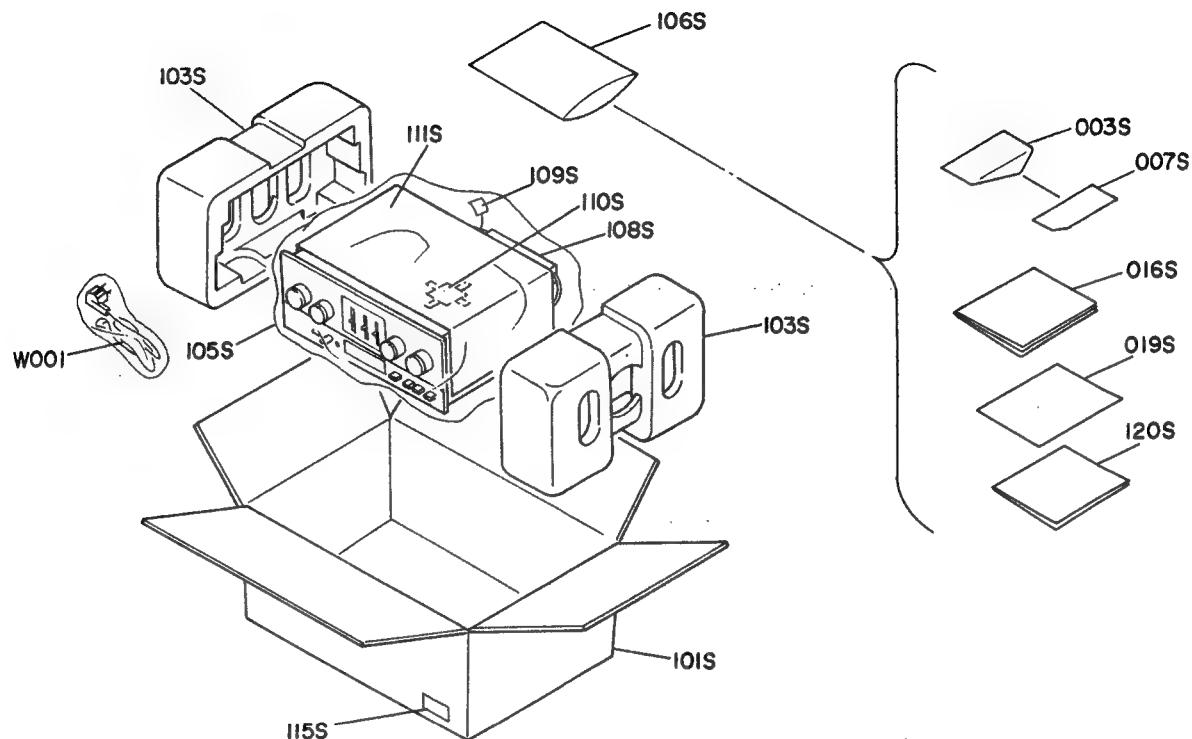
- [P02-99] Main P.W. Board and General parts (PM400 ONLY)



REF. DESIG.	Q'TY	PART NO.	DESCRIPTION	
	N			
			(MP400, ONLY)	
001F	1	2258126010	Stay, (L)	
002F	1	2258126022	Stay, (R)	
003F	1	2258126033	Stay, Center	
004F	1	2127160010	Bracket	
005F	4	51280408B0	B.H. Tapped Screw	
006F	2	2276005050	Clamper	
007F	2	51280308B0	F. Washer Screw	F3 x 8
008F	4	52040510A0	H. Head Bolt, S.F	
009F	2	2886005030	Clamper	
010F	1	51280308B0	B.H. Tapped Screw	B3 x 8
011F	1	62030049W0	Lug	
012F	1	2887005012	Clamper	
013F	1	51280308B0	B.H. Tapped Screw	B3 x 8
902F	2	2218259020	Bushing	
903F	1	2205861010	Label	

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION	
	N			
001L	1	2274267012	Heatsink	
002L	1	2127160020	Bracket	
003L	1	2258160050	Bracket	
004L	4	51280308B0	B.H. Tapped Screw	B3 x 8
005L	2	51280308B0	B.H. Tapped Screw	B3 x 8
006L	2	2231160040	Bracket	
007L	2	51280308B0	B.H. Tapped Screw	B3 x 8
008L	1	2258005013	Clamper	
009L	2	51280314B0	B.H. Tapped Screw	B3 x 14
△L001	1	TS18613010	Power Transformer	
P700	1	YG21270010	P.W. Board, Main	
	1	ZZ21277010	P.W. Board Assembly	
△F003	1	FS10350800	Fuse	3.5AT
△F004	1	FS10350800	Fuse	3.5AT

• [H01-99] Packing Materials



REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
003S	1	2818813010	Envelope	108S	1	2864804010	Sleeve
007S	1	9630000180	Guarantee Card	109S	1	9560000043	Hang Tag
016S	1	2127851310	Instructions	110S	1	2731821010	Silicagel
019S	1	2129851030	Instructions (PM400, ONLY)	111S	1	2918107160	Sheet
019S	1	2127851030	Instructions (PM250, ONLY)	115S	3	9526019060	Serial NO. Card
101S	1	2129801010	Packing Case (PM400, ONLY)	120S	1	2129856010	Circuit Diagram (PM400, ONLY)
101S	1	2127801010	Packing Case (PM250, ONLY)	120S	1	2127856010	Circuit Diagram (PM250, ONLY)
103S	2	4214809013	Cushion	△W001	1	ZC01805020	A.C. Power Cord
105S	1	9014335330	Polyethy Bag				
106S	1	9013025010	Polyethy Bag				

13. ELECTRICAL PARTS LIST

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
P700	1	YG21270010	P700-MAIN CIRCUIT BOARD P.W. Board, Main (PM400, ONLY)	C701	1	DD15151370	Ceramic 150pF ±5%
	1	ZZ21277010	P.W. Board Assembly (PM250, ONLY)	C702	1	DD15151370	Ceramic 150pF ±5%
	1	ZZ21278010	P.W. Board Assembly	C703	1	EA10701030	Elect 100μF 10V
				C704	1	EA10701030	Elect 100μF 10V
CD01	1	EA22505090	P700-CAPACITORS Elect 2.2μF 50V	C705	1	DD15180370	Ceramic 18pF ±5%
CD02	1	EA22505090	Elect 2.2μF 50V	C706	1	DD15180370	Ceramic 18pF ±5%
CD03	1	DD15470370	Ceramic 47pF ±5%	C707	1	EA47603590	Elect 47μF 35V
CD04	1	DD15470370	Ceramic 47pF ±5%	C708	1	EA47603590	Elect 47μF 35V
CD05	1	EA22505090	Elect 2.2μF 50V	C711	1	DK16221510	Ceramic 220pF ±10%
CD06	1	EA22505090	Elect 2.2μF 50V	C712	1	DK16221510	Ceramic 220pF ±10%
CD07	1	DD15510310	Ceramic 51pF ±5%	C717	1	DF16473540	Film 0.047μF ±10%
CD08	1	DD15510310	Ceramic 51pF ±5%	C718	1	DF16473540	Film 0.047μF ±10%
CE01	1	EA33505030	Elect 3.3μF 50V	C720	1	EA10705090	Elect 100μF 50V
CE02	1	EA33505030	Elect 3.3μF 50V	C721	1	EA10705090	Elect 100μF 50V
CE03	1	DD15221370	Ceramic 220pF ±5%	C722	1	EA10705090	Elect 100μF 50V
CE04	1	DD15221370	Ceramic 220pF ±5%	C801	1	EA47705090	Elect 470μF 50V
CE05	1	EA10701030	Elect 100μF 10V	C802	1	EA10701630	Elect 100μF 16V
CE06	1	EA10701030	Elect 100μF 10V	C804	1	EA47601630	Elect 47μF 16V
CE08	1	EA10701030	Elect 100μF 10V	C805	1	EA33505030	Elect 3.3μF 50V
CE09	1	EA33505030	Elect 3.3μF 50V	C806	1	DF17102350	Film 0.001μF ±20%
CE10	1	EA33505030	Elect 3.3μF 50V	C807	1	EA47603590	Elect 47μF 35V
CH01	1	DF16224350	Film 0.22μF ±10%	△C808	1	EB68805020	Elect 6800μF 50V
CH02	1	DF16224350	Film 0.22μF ±10%	△C809	1	EB68805020	Elect 6800μF 50V
CN01	1	DF16332350	Film 3300pF ±10%	△C810	1	DK18103510	Ceramic 0.01μF
CN02	1	DF16332350	Film 3300pF ±10%	△C811	1	DK18103510	Ceramic 0.01μF
CN03	1	DF16332350	Film 3300pF ±10%	C812	1	EA10701630	Elect 100μF 16V
CN04	1	DF16332350	Film 3300pF ±10%	C813	1	EA47605090	Elect 47μF 50V
CN21	1	EA33700690	Elect 330μF 6.3V	C803	1	EA22601630	(PM250, ONLY) Elect 22μF 16V
CN22	1	EA10505030	Elect 1μF 50V				P700-RESISTORS (All Resistors are ±5% and 1/4W)
C401	1	EA33505030	Elect 3.3μF 50V	RD01	1	GD05393140	39KΩ
C402	1	EA33505030	Elect 3.3μF 50V	RD02	1	GD05393140	39KΩ
C403	1	DD15820370	Ceramic 82pF ±5%	RD03	1	GD05471140	470Ω
C404	1	DD15820370	Ceramic 82pF ±5%	RD04	1	GD05471140	470Ω
C405	1	EA33700690	Elect 330μF 6.3V	RD05	1	GD05104140	100KΩ
C406	1	EA33700690	Elect 330μF 6.3V	RD06	1	GD05104140	100KΩ
C409	1	DF15223350	Film 0.022μF ±5%	RD07	1	GD05364140	360KΩ
C410	1	DF15223350	Film 0.022μF ±5%	RD08	1	GD05364140	360KΩ
C411	1	DF15562350	Film 5600pF ±5%	RD09	1	GD05562140	5.6KΩ
C412	1	DF15562350	Film 5600pF ±5%	RD10	1	GD05562140	5.6KΩ
C415	1	EA33700690	Elect 330μF 6.3V	RD11	1	GD05224140	220KΩ
C416	1	EA33700690	Elect 330μF 6.3V	RD12	1	GD05224140	220KΩ
C417	1	EA33505030	Elect 3.3μF 50V	RD13	1	GD05221140	220Ω
C418	1	EA33505030	Elect 3.3μF 50V	RD14	1	GD05221140	220Ω
C419	1	EA10701630	Elect 100μF 16V	RE01	1	GD05471140	470Ω
C420	1	EA10703590	Elect 100μF 35V	RE02	1	GD05471140	470Ω
C421	1	DD15560370	Ceramic 56pF ±5%	RE03	1	GD05104140	100KΩ
C422	1	DD15560370	Ceramic 56pF ±5%	RE04	1	GD05104140	100KΩ
C423	1	DK16392300	Ceramic 3900pF ±10%	RE05	1	GD05471140	470Ω
C424	1	DK16392300	Ceramic 3900pF ±10%	RE06	1	GD05471140	470Ω
C729	1	DK18103300	Seramic 0.01μF				
C730	1	DK18103300	Seramic 0.01μF				

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	
RE07	1	GD05562140	5.6KΩ	(PM400, ONLY)
RE08	1	GD05562140	5.6KΩ	(PM400, ONLY)
RE09	1	GD05103140	10KΩ	
RE10	1	GD05103140	10KΩ	
RE11	1	GD05221140	220Ω	
RE12	1	GD05221140	220Ω	
RE13	1	GD05272140	2.7KΩ	
RE14	1	GD05272140	2.7KΩ	
RE15	1	GD05104140	100KΩ	
RE16	1	GD05104140	100KΩ	
RH05	1	GD05302140	3KΩ	
RH06	1	GD05302140	3KΩ	
RH07	1	GD05333140	33KΩ	
RH08	1	GD05333140	33KΩ	
			(PM400, ONLY)	
RN01	1	GD05682140	6.8KΩ	
RN02	1	GD05682140	6.8KΩ	
RN03	1	GD05682140	6.8KΩ	
RN04	1	GD05682140	6.8KΩ	
RN05	1	GD05473140	47KΩ	
RN06	1	GD05473140	47KΩ	
			(PM250, ONLY)	
RN01	1	GD05822140	8.2KΩ	
RN02	1	GD05822140	8.2KΩ	
RN03	1	GD05822140	8.2KΩ	
RN04	1	GD05822140	8.2KΩ	
RN05	1	GD05333140	33KΩ	
RN06	1	GD05333140	33KΩ	
RN07	1	GG05471140	470Ω	
RN08	1	GG05471140	470Ω	
RN09	1	GG05471140	470Ω	
RN10	1	GG05471140	470Ω	
RN21	1	GD05153140	15KΩ	
RN21	1	GD05103140	10KΩ	
RN22	1	GD05682140	6.8KΩ	
RN23	1	GD05394140	390KΩ	
RN24	1	GD05224140	220KΩ	
RN25	1	GD05224140	220KΩ	
RN26	1	GD05124140	120KΩ	
RV01	1	GD05104140	100KΩ	
RV02	1	GD05104140	100KΩ	
RV03	1	GD05154140	150KΩ	
RV04	1	GD05154140	150KΩ	
RX51	1	GD05123140	12KΩ	
RX52	1	GD05272140	2.7KΩ	
RX53	1	GA05330010	33Ω	1W
R401	1	GD05471140	470Ω	
R402	1	GD05471140	470Ω	
R403	1	GD05563140	56KΩ	
R404	1	GD05563140	56KΩ	
R405	1	GD05184140	180KΩ	
R406	1	GD05184140	180KΩ	
R407	1	GD05153140	15KΩ	
R408	1	GD05153140	15KΩ	
R409	1	GD05271140	270Ω	
R410	1	GD05271140	270Ω	
R413	1	GD05154140	150KΩ	
R414	1	GD05154140	150KΩ	
R415	1	GD05123140	12KΩ	
R416	1	GD05123140	12KΩ	
R421	1	GD05392140	3.9KΩ	
R422	1	GD05392140	3.9KΩ	
R423	1	GD05331140	330Ω	

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION		
R424	1	GD05331140	330Ω		
R425	1	GD05224140	220KΩ		
R426	1	GD05224140	220KΩ		
R427	1	GD05221140	220Ω		
R428	1	GD05221140	220Ω		
R429	1	GD05274140	270KΩ		
R430	1	GD05274140	270KΩ		
R431	1	GG05201140	220Ω		
R432	1	75061001P0	Jumper		
R701	1	GD05471140	470Ω		
R702	1	GD05471140	470Ω		
R703	1	GD05393140	39KΩ		
R704	1	GD05393140	39KΩ		
R705	1	GD05102140	1KΩ		
R706	1	GD05102140	1KΩ		
R707	1	GD05103140	10KΩ		
R708	1	GD05103140	10KΩ		
R709	1	GD05333140	33KΩ		
R710	1	GD05333140	33KΩ		
R711	1	GG05152140	1.5KΩ		
R712	1	GG05152140	1.5KΩ		
R713	1	GG05332140	3.3KΩ		
R714	1	GG05332140	3.3KΩ		
R715	1	GG05332140	3.3KΩ		
R716	1	GG05332140	3.3KΩ		
R717	1	RA02020180	2KΩ (B) Trimming		
R718	1	RA02020180	2KΩ (B) Trimming		
R719	1	GG05151140	150Ω		
R720	1	GG05151140	150Ω		
R721	1	GG05221120	220Ω		
R722	1	GG05221120	220Ω		
R723	1	GB05272020	0.27Ω	2W	
R724	1	GB05272020	0.27Ω	2W	
R725	1	GB05272020	0.27Ω	2W	
R726	1	GB05272020	0.27Ω	2W	
R727	1	GA05100020	10Ω	2W	
R728	1	GA05100020	10Ω	2W	
R729	1	RC10022120	2.2Ω	±10%	½W
R730	1	RC10022120	2.2Ω	±10%	½W
R733	1	GD05122140	1.2KΩ		
R734	1	GD05122140	1.2KΩ		
R735	1	GA05331020	330Ω	2W	(PM400, ONLY)
R736	1	GA05331020	330Ω	2W	(PM400, ONLY)
R739	1	GG05182140	1.8KΩ		
R741	1	GG05330140	330Ω		
R742	1	GG05330140	330Ω		
R743	1	GD05222140	2.2KΩ		
R744	1	GD05222140	2.2KΩ		
R801	1	GG05472140	4.7KΩ		
R802	1	GG05472140	4.7KΩ		
R803	1	GG05152120	1.5KΩ		½W
R804	1	GD05103140	10KΩ		
R805	1	GD05123140	12KΩ		
R806	1	RF05221140	220Ω	Fusible	
R808	1	GG05332120	3.3KΩ	½W	
R809	1	RF05220120	22Ω	½W	Fusible
R745	1	GD05273140	27KΩ		
R746	1	GD05273140	27KΩ		

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION		REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			P700-SEMICONDUCTORS					(PM400, ONLY)
QD01	1	HT111272B0	Transistor 2SA1127(S or T)		Q705	1	HT322402A0	Transistor 2SC2240(GR or BL)
QD02	1	HT111272B0	Transistor 2SA1127(S or T)		Q706	1	HT322402A0	Transistor 2SC2240(GR or BL)
QE01	1	HT111272B0	Transistor 2SA1127(S or T)		Q707	1	HT406662E0	Transistor 2SD666A(B or C)
QE02	1	HT111272B0	Transistor 2SA1127(S or T)		Q708	1	HT406662E0	Transistor 2SD666A(B or C)
QE03	1	HT326342B0	Transistor 2SC2634(S or T)		Q711	1	HT406672A0	Transistor 2SD667A(B or C)
QE04	1	HT326342B0	Transistor 2SC2634(S or T)		Q712	1	HT406672A0	Transistor 2SD667A(B or C)
QN01*	1	HT326342B0	Transistor 2SC2634(S or T)		Q713	1	HT206472A0	Transistor 2SB647A(B or C)
QN02*	1	HT326342B0	Transistor 2SC2634(S or T)		Q714	1	HT206472A0	Transistor 2SB647A(B or C)
QN03*	1	HT111272B0	Transistor 2SA1127(S or T)		ΔQ715	1	HT325782B0	Transistor 2SC2578(O or Y)
QN04*	1	HT111272B0	Transistor 2SA1127(S or T)		ΔQ716	1	HT325782B0	Transistor 2SC2578(O or Y)
QN05	1	HD20011050	Diode 1S1555		ΔQ717	1	HT111032B0	Transistor 2SA1103(O or Y)
QN06	1	HD20011050	Diode 1S1555		ΔQ718	1	HT111032B0	Transistor 2SA1103(O or Y)
QN07	1	HD20011050	Diode 1S1555					(PM250, ONLY)
QN08	1	HD20011050	Diode 1S1555		Q705	1	HT314001E0	Transistor 2SC1400(E)
QN09	1	HD20011050	Diode 1S1555		Q706	1	HT314001E0	Transistor 2SC1400(E)
QN10	1	HD20011050	Diode 1S1555		Q707	1	HT406662C0	Transistor 2SD666(C or D)
QN11	1	HD20011050	Diode 1S1555		Q708	1	HT406662C0	Transistor 2SD666(C or D)
QN12	1	HD20011050	Diode 1S1555		Q711	1	HT322742B0	Transistor 2SC2274(E or F)
QN13	1	HD20005010	Diode W06B		Q712	1	HT322742B0	Transistor 2SC2274(E or F)
QN14	1	HD20005010	Diode W06B		Q713	1	HT109842B0	Transistor 2SA984(E or F)
QN15	1	HD20005010	Diode W06B		Q714	1	HT109842B0	Transistor 2SA984(E or F)
QN16	1	HD20005010	Diode W06B		ΔQ715	1	HT325772B0	Transistor 2SC2577(O or Y)
QN21*	1	HT326342B0	Transistor 2SC2634(S or T)		ΔQ716	1	HT325772B0	Transistor 2SC2577(O or Y)
QN22*	1	HT326342B0	Transistor 2SC2634(S or T)		ΔQ717	1	HT111022B0	Transistor 2SA1102(O or Y)
QN23*	1	HT111272B0	Transistor 2SA1127(S or T)		ΔQ718	1	HT111022B0	Transistor 2SA1102(O or Y)
QN24*	1	HT111272B0	Transistor 2SA1127(S or T)					
QN25	1	HD30023090	Zener WZ071		Q801	1	HT406672E0	Transistor 2SD667(B or C)
QN26	1	HD30023090	Zener WZ071		Q802	1	HT326342B0	Transistor 2SC2634(S or T)
QN27	1	HT111272B0	Transistor 2SA1127(S or T)		Q805	1	HD30024090	Zener WZ-120
QN28*	1	HT326342B0	Transistor 2SC2634(S or T)		Q810	1	HD20005010	Diode W06B
QN29	1	HD20001210	Diode 1S2473 (PM400, ONLY)		Q812	1	HT206472E0	Transistor 2SB647(B or C)
QN29	1	75060501P0	Jumper (PM250, ONLY)		Q813	1	HT326342B0	Transistor 2SC2634(S or T)
QN30*	1	HT111272B0	Transistor 2SA1127(S or T)					(PM400, ONLY)
QN31	1	HD20005010	Diode W06B		Q803	1	HD30009010	Zener Low Noise
QX15	1	HT403302A0	Transistor 2SD330		Q806	1	HD20011290	Diode
Q401	1	HT111272B0	Transistor 2SA1127(S or T)		Q807	1	HD20011290	Diode
Q402	1	HT111272B0	Transistor 2SA1127(S or T)		Q808	1	HD20011290	Diode
Q403	1	HT326342B0	Transistor 2SC2634(S or T)		Q809	1	HD20011290	Diode
Q404	1	HT326342B0	Transistor 2SC2634(S or T)					(PM250, ONLY)
Q701	1	HT111272B0	Transistor 2SA1127(S or T)		Q803	1	HD30024090	Zener WZ-120
Q702	1	HT111272B0	Transistor 2SA1127(S or T)		ΔQ806	1	HD20009290	Diode S2V-20
Q703	1	HT111272B0	Transistor 2SA1127(S or T)		ΔQ807	1	HD20009290	Diode S2V-20
Q704	1	HT111272B0	Transistor 2SA1127(S or T)		ΔQ808	1	HD20009290	Diode S2V-20
Q709	1	HT326342B0	Transistor 2SC2634(S or T)		ΔQ809	1	HD20009290	Diode S2V-20
Q710	1	HT326342B0	Transistor 2SC2634(S or T)					
Q719	1	HD20003210	Diode 1S2471		JV01	1	YT02040280	P700-MISCELLANEOUS
Q720	1	HD20003210	Diode 1S2471		JV02	1	YT02040280	Terminal (PM400, ONLY)
Q721	1	HD30030090	Zener WZ-177		JV03	1	YT02060140	Terminal (PM400, ONLY)
Q722	1	HD20005010	Diode W06B		JV04	1	YT02050010	Terminal (PM250, ONLY)
			Note: * are exchangeable.		J805	1	YJ08000270	Jack, Fuse Holder
QN01	1	HT314001E0	Transistor 2SC1400		J806	1	YJ08000270	Jack, Fuse Holder
QN02	1	HT314001E0	Transistor 2SC1400		J807	1	YJ08000270	Jack, Fuse Holder
QN21	1	HT314001E0	Transistor 2SC1400		J808	1	YJ08000270	Jack, Fuse Holder
QN22	1	HT314001E0	Transistor 2SC1400		L701	1	LL23915120	Choke Coil
QN28	1	HT314001E0	Transistor 2SC1400		L702	1	LL23915120	Choke Coil
QN03	1	HT107501E0	Transistor 2SA750		S005	1	SR04020180	Rotary Switch
QN04	1	HT107501E0	Transistor 2SA750		SV01	1	SR04040170	Rotary Switch (PM400, ONLY)
QN23	1	HT107501E0	Transistor 2SA750		SV01	1	SR04030250	Rotary Switch (PM250, ONLY)
QN24	1	HT107501E0	Transistor 2SA750					
QN30	1	HT107501E0	Transistor 2SA750					

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
PF01	1	YK21271610	PF01-TONE AMP. CIRCUIT BOARD	RF31	1	GD05474140	470KΩ
	1	ZZ21278610	P.W. Board, Tone Amp. P.W. Board Assembly	RF32	1	GD05474140	470KΩ
			PF01-CAPACITORS	RF33	1	RS01040130	100KΩ(±10%) x 2 Variable
CF01	1	DD15101300	Ceramic 100pF ±5%	RF34	1	RS01040130	100KΩ(±10%) x 2 Variable
CF02	1	DD15101300	Ceramic 100pF ±5%	RF35	1	RS01040130	100KΩ(±10%) x 2 Variable
CF03	1	DF16222350	Film 2200pF ±10%	RX25	1	GD05822140	8.2KΩ
CF04	1	DF16222350	Film 2200pF ±10%	RX26	1	GD05822140	8.2KΩ
CF05	1	DF16472350	Film 4700pF ±10%	RX27	1	GD05182140	1.8KΩ
CF06	1	DF16472350	Film 4700pF ±10%	RX28	1	GD05182140	1.8KΩ
CF07	1	DF16223350	Film 0.022μF ±10%	RX29	1	GD05121140	120Ω
CF08	1	DF16223350	Film 0.022μF ±10%	RX30	1	GD05121140	120Ω
CF09	1	DF16223350	Film 0.022μF ±10%	RX31	1	GD05272140	2.7KΩ
CF10	1	DF16223350	Film 0.022μF ±10%	RX32	1	GD05272140	2.7KΩ
				RX33	1	RA02030140	20KΩ(±10%) Trimming
				RX34	1	RA02030140	20KΩ(±10%) Trimming
CF11	1	DF16822350	Film 8200pF ±10%	RX35	1	GD05394140	390KΩ
CF12	1	DF16822350	Film 8200pF ±10%	RX36	1	GD05394140	390KΩ
CF13	1	EA33505030	Elect 3.3μF 50V	RX37	1	GD05682140	6.8KΩ
CF14	1	EA33505030	Elect 3.3μF 50V	RX38	1	GD05682140	6.8KΩ
CF15	1	EA33505030	Elect 3.3μF 50V	RX39	1	GD05822140	8.2KΩ
CF16	1	EA33505030	Elect 3.3μF 50V	RX40	1	GD05822140	8.2KΩ
				RX41	1	GD05103140	10KΩ
CX01	1	EA10602590	Elect 10μF 25V	RX42	1	GD05103140	10KΩ
CX02	1	EA10602590	Elect 10μF 25V	RX43	1	GD05562140	5.6KΩ
CX03	1	EA10602590	Elect 10μF 25V	RX44	1	GD05562140	5.6KΩ
CX04	1	EA10602590	Elect 10μF 25V				
CX05	1	EA10602590	Elect 10μF 25V	RX45	1	GD05181140	180Ω
CX06	1	EA10602590	Elect 10μF 25V	RX46	1	GD05181140	180Ω
			PF01-RESISTORS (All Resistors are ±5% and 1/4W)	RX47	1	GD05103140	10KΩ
RF01	1	GD05123140	12KΩ	RX48	1	GD05103140	10KΩ
RF02	1	GD05123140	12KΩ	RX49	1	GD05103140	10KΩ
RF03	1	GD05562140	5.6KΩ	RX50	1	GD05103140	10KΩ
RF04	1	GD05562140	5.6KΩ				
RF05	1	GD05334140	330KΩ	PX00-SEMICONDUCTORS			
RF06	1	GD05334140	330KΩ	QF01	1	HT326342B0	Transistor 2SC2634(S or T)
RF07	1	GD05562140	5.6KΩ	QF02	1	HT326342B0	Transistor 2SC2634(S or T)
RF08	1	GD05562140	5.6KΩ	QF03	1	HT111272B0	Transistor 2SA1127(S or T)
RF09	1	GD05562140	5.6KΩ	QF04	1	HT111272B0	Transistor 2SA1127(S or T)
RF10	1	GD05562140	5.6KΩ				
				QX05	1	HD20011050	Diode 1S1555
RF11	1	GD05273140	27KΩ	QX06	1	HD20011050	Diode 1S1555
RF12	1	GD05273140	27KΩ	QX07	1	HD20011050	Diode 1S1555
RF13	1	GD05153140	15KΩ	QX08	1	HD20011050	Diode 1S1555
RF14	1	GD05153140	15KΩ	QX09	1	HT107501E0	Transistor 2SA750(E)
RF15	1	GD05123140	12KΩ	QX10	1	HT107501E0	Transistor 2SA750(E)
RF16	1	GD05123140	12KΩ	QX11	1	HT314001E0	Transistor 2SC1400(E)
RF17	1	GD05273140	27KΩ	QX12	1	HT314001E0	Transistor 2SC1400(E)
RF18	1	GD05273140	27KΩ	QX13	1	HH00009030	Thermistor SDT-1000
RF19	1	GD05334140	330KΩ	QX14	1	HH00009030	Thermistor SDT-1000
RF20	1	GD05334140	330KΩ				
				PG00-VOLUME CONTROL CIRCUIT BOARD			
RF21	1	GD05155140	1.5MΩ	PG00	1	YK21271620	P.W. Board, Volume Control
RF22	1	GD05155140	1.5MΩ		1	ZZ21278620	P.W. Board Assembly
RF23	1	GD05683140	68KΩ				
RF24	1	GD05683140	68KΩ	PG00-CAPACITORS			
RF25	1	GD05473140	47KΩ	CG01	1	DK16681300	Ceramic 680pF ±10%
RF26	1	GD05473140	47KΩ	CG02	1	DK16681300	Ceramic 680pF ±10%
RF27	1	GD05472140	4.7KΩ	CG03	1	DF16473350	Film 0.047μF ±10%
RF28	1	GD05472140	4.7KΩ	CG04	1	DF16473350	Film 0.047μF ±10%
RF29	1	GD05221140	220Ω				
RF30	1	GD05221140	220Ω				

REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION	REF. DESIG.	Q'TY N	PART NO.	DESCRIPTION
			PG00-RESISTORS (All Resistors are ±5% and 1/4W)				PX00-LED CIRCUIT BOARD P.W. Board, Led P.W. Board Assembly
RG01	1	GD05392140	3.9KΩ	PX00	1	YK21271650	
RG02	1	GD05392140	3.9KΩ		1	ZZ21278650	
RG03	1	GD05333140	33KΩ				PX00-RESISTORS (All Resistors are ±5% and 1/4W)
RG04	1	GD05333140	33KΩ	RX01	1	GD05182140	1.8KΩ
RG05	1	GD05822140	8.2KΩ	RX02	1	GD05182140	1.8KΩ
RG06	1	GD05822140	8.2KΩ	RX03	1	GD05182140	1.8KΩ
RG07	1	RM01040270	100KΩ Variable	RX04	1	GD05182140	1.8KΩ
RG08	1	RK02040080	200KΩ Variable	RX05	1	GD05182140	1.8KΩ
				RX06	1	GD05182140	1.8KΩ
PJ00	1	YK21271640	PJ00-MIC AMP. CIRCUIT BOARD P.W. Board, Mic Amp.	RX07	1	GD05182140	1.8KΩ
	1	ZZ21278640	P.W. Board Assembly	RX08	1	GD05182140	1.8KΩ
				RX09	1	GD05182140	1.8KΩ
			PJ00-CAPACITORS	RX10	1	GD05182140	1.8KΩ
CJ01	1	DD15331370	Ceramic 330pF ±5%	RX11	1	GD05182140	1.8KΩ
CJ02	1	DD15331370	Ceramic 330pF ±5%	RX12	1	GD05182140	1.8KΩ
CJ03	1	EA10505030	Elect 1μF 50V	RX13	1	GD05182140	1.8KΩ
CJ04	1	DD15560370	Ceramic 56pF ±5%	RX14	1	GD05182140	1.8KΩ
CJ05	1	EA10601630	Elect 10μF 16V	RX15	1	GD05182140	1.8KΩ
CJ06	1	EA10505030	Elect 1μF 50V	RX16	1	GD05182140	1.8KΩ
CJ07	1	EA33505030	Elect 3.3μF 50V	RX17	1	GD05182140	1.8KΩ
CJ08	1	DD15151370	Ceramic 150pF ±5%	RX18	1	GD05182140	1.8KΩ
CJ09	1	EA22601630	Elect 22μF 16V	RX19	1	GD05182140	1.8KΩ
CJ10	1	DK18103300	Ceramic 0.01μF +100%–0	RX20	1	GD05182140	1.8KΩ
CJ11	1	DD11100370	Ceramic 10pF ±0.5pF				
CJ12	1	EA10701630	Elect 100μF 16V	RX21	1	GD05182140	1.8KΩ
				RX22	1	GD05182140	1.8KΩ
			PJ00-RESISTORS (All Resistors are ±5% and 1/4W)	RX23	1	GD05182140	1.8KΩ
RJ01	1	GD05103140	10KΩ	RX24	1	GD05182140	1.8KΩ
RJ02	1	GD05471140	470Ω				PX00-SEMICONDUCTORS
RJ03	1	GD05474140	470KΩ				L.E.D. 12DOT
RJ04	1	GD05103140	10KΩ	QX01	1	HI11202320	L.E.D. 12DOT
RJ05	1	GD05682140	6.8KΩ	QX02	1	HI11202320	IC IR-2418A
RJ06	1	GD05561140	560Ω	QX03	1	HC10002320	IC IR-2418A
RJ07	1	GD05224140	220KΩ	QX04	1	HC10002320	
RJ08	1	GD05473140	47KΩ				PY00-PILOT LAMP
RJ09	1	GD05681140	680KΩ				CIRCUIT BOARD
RJ10	1	RM01040280	100KΩ(B) x 2 Variable	PY00	1	YK21271660	P.W. Board, Pilot Lamp
RJ11	1	GD05472140	4.7KΩ		1	ZZ21278660	P.W. Board Assembly
RJ12	1	GD05101140	100Ω				
				QY01	1	HI10009020	L.E.D. LN26RP
			PJ00-SEMICONDUCTORS				
QJ01	1	HT326342B0	Transistor 2SC2634(S or T)				
QJ02	1	HT326342B0	Transistor 2SC2634(S or T)				
JJ01	1	YJ01001340	PJ00-JACK Jack, Mic				
PS00	1	YK21271630	PS00-LOUDNESS CIRCUIT BOARD				
	1	ZZ21278630	P.W. Board, Loudness				
			P.W. Board Assembly				
SS01	1	SP02020420	PS00-SWITCHES				
SS02	1	SP02010260	Push Switch, Spk. System 1, 2				
			Push Switch, Loudness				

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

14. TECHNICAL SPECIFICATIONS

MODEL PM250

AUDIO SECTION

POWER OUTPUT, DIN, 4 OHM, PER CHANNEL	50W
POWER OUTPUT, FTC AMERICAN STANDARDS, 4 OHM, PER CHANNEL	32W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT	0.1%
I.M. DISTORTION AT RATED POWER OUTPUT (250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1)	0.1%
POWER OUTPUT, DIN, 8 OHM, PER CHANNEL	39W
POWER OUTPUT, FTC AMERICAN STANDARDS, 8 OHM, PER CHANNEL	25W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT	0.05%
I.M. DISTORTION AT RATED POWER OUTPUT (250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1)	0.05%
POWER BANDWIDTH	20 Hz ~ 50 kHz
DAMPING FACTOR 8 OHM	100
Frequency Response	
Phono (RIAA)	±0.5 dB
Aux (±1 dB)	20 Hz ~ 50 kHz
Input Terminals	
Phono: Input Impedance	47 k ohms
Input Capacitance	250 pF
Input Sensitivity	2.8 mV
Overload Margin	35 dB
Aux: Input Impedance	25 k ohms
Input Sensitivity	150 mV
Phono Equivalent Input Noise	0.5 µV
Phono Dynamic Range (Ratio of input overload to equivalent input noise)	109 dB
Channel Balance (0 to -40 dB/40 Hz ~ 16 kHz)	
Phono	3.0 dB
Aux	3.0 dB
Interchannel Crosstalk	
Phono, 1 kHz	47 dB
Aux, 1 kHz	62 dB
Tape, 1 kHz	62 dB
Intersource Crosstalk (Worst Point), 1 kHz	55 dB
Output Voltage, 1 kHz	
Tape Out	415 mV
Output Impedance, 1 kHz	
Tape Out	220 ohms

GENERAL

Power Requirements	220 V AC, 50 Hz
	(E and N versions are featuring an external voltage selector for use on 110 V.)
Power Consumption at Rated Output, both Channels Driven	140 ± 20W
Idling Power	18W ± 5W
Semiconductor Complement	
Transistors	47
Diodes	29
Integrated Circuits	2
Dimensions	
Panel Width	416 mm (16-3/8 inches)
Panel Height	146 mm (5-3/4 inches)
Depth	243 mm (9-9/16 inches)
Weight	
Unit Alone	6.5 kg (14.3 lbs)
Packed for Shipment	8.0 kg (17.6 lbs)

MODEL PM400

AUDIO SECTION

POWER OUTPUT, DIN, 4 OHM, PER CHANNEL	66W
POWER OUTPUT, FTC AMERICAN STANDARDS, 4 OHM, PER CHANNEL	45W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT	0.1%
I.M. DISTORTION AT RATED POWER OUTPUT (250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1)	0.1%
POWER OUTPUT, DIN, 8 OHM, PER CHANNEL	54W
POWER OUTPUT, FTC AMERICAN STANDARDS, 8 OHM, PER CHANNEL	36W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT	0.05%
I.M. DISTORTION AT RATED POWER OUTPUT (250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1)	0.05%
POWER BANDWIDTH	15 Hz ~ 60 kHz
DAMPING FACTOR 8 OHM	100

Frequency Response

Phono (RIAA)	±0.5 dB
Aux (+1 dB)	20 Hz ~ 50 kHz

Input Terminals

Phono: Input Impedance	47 k ohms
Input Capacitance	250 pF
Input Sensitivity	2.8 mV
Overload Margin	35 dB
Aux: Input Impedance	25 k ohms
Input Sensitivity	150 mV

Phono Equivalent Input Noise	0.5 μV
Phono Dynamic Range (Ratio of input overload to equivalent input noise)	109 dB

Channel Balance (0 to -40 dB/40 Hz ~ 16 kHz)

Phono	3.0 dB
Aux	3.0 dB

Interchannel Crosstalk

Phono, 1 kHz	47 dB
Aux, 1 kHz	62 dB
Tape, 1 kHz	62 dB

Intersource Crosstalk (Worst Point), 1 kHz	55 dB
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Output Voltage, 1 kHz	
Tape Out	415 mV
Output Impedance, 1 kHz	
Tape Out	220 ohms

GENERAL

Power Requirements	220 V AC, 50 Hz
(E and N versions are featuring an external voltage selector for use on 110 V.)	

Power Consumption at Rated Output, both Channels Driven	160W ± 20W
Idling Power	14W ± 5W

Semiconductor Complement	
Transistors	47
Diodes	29
Integrated Circuits	2

Dimensions	
Panel Width	416 mm (16-3/8 inches)
Panel Height	146 mm (5-3/4 inches)
Depth	243 mm (9-9/16 inches)

Weight	
Unit Alone	7.0 kg (15.4 lbs)
Packed for Shipment	8.5 kg (18.7 lbs)